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OPA $50 Price Disappoints Canadian Mills

Temporary Sixty-Day Ceiling On Price of Newsprint Viewed As Hardship For Dominion Manufacturers—Proposed Increase To $53 Ton Held Justified By Higher Costs—Other Late Mill News.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., April 1, 1942—Disappointment is expressed here at the action of the United States Office of Price Administration in imposing a temporary 60-day ceiling on the price of newsprint, restricting it to the present level of $50 per ton, New York delivery. The proposed increase of $3 per ton, which was announced in December last, was to have become effective today, and as far as Canadian mills were concerned it would have applied to all exports of newsprint to the United States, the new price being in consonance with an increase announced by American mills. The increase would not have applied to newsprint sold for domestic use in Canada, to which the price ceiling already announced by the Wartime Prices and Trade Board applied. The hope is expressed that the further investigation to be made by the OPA as to costs of production will show that the proposed increase is justified. Producers here, who over a long period have been faced with rising costs in every direction, feel that the proposed increase was very moderate in comparison with the costs to which they are subjected. Had the increase gone into effect the added revenue produced would have amounted to an estimated $10,000,000 during the ensuing year. The newsprint companies here went through a long period of hard times prior to the outbreak of war. All the large companies went into receivership, followed by a drastic reorganization of their financial set-up, and they have only just begun to pull themselves together and get on a basis where investors could look for some small return on their capital. Ever since the war broke out, with the consequent added demands for their output, the companies have maintained a conservative policy in regard to price, being mainly concerned in keeping up quality and continuity of supply. This they have done.

Increase Only Partly Covers Rising Costs

The proposed increase, which, according to a statement put out some time ago by the Canadian Pulp and Paper Association, "by no means adds up to the costs and production difficulties introduced by the war," was the first price advance announced to United States customers in four and one quarter years. In view of the temporary character of the decision announced by the OPA, officials here are naturally reticent in respect to any public statement, but the newspapers discuss the matter. For instance, the Montreal Gazette says:

"To Canadian newsprint manufacturers, who have been experiencing a considerable increase in production costs, on which they have based their proposed increase of $3 a ton for the second quarter, the news that the OPA in the United States has, temporarily and pending further study of the cost situation in the industry in the two countries, imposed a 60-day ceiling on the price at the present level, was evidently disappointing. One observer in the trade, discussing the OPA action, said that the move could not but be disappointing to an industry which has since the beginning of the war pursued an extremely moderate price policy, having made no attempt to capitalize on the stronger position in which it found itself with the elimination of Scandinavian sources of supply, and having held the price of newsprint unchanged over the first thirty-one months of war at the level that had prevailed since the beginning of 1938. As noted, however, the ceiling has been imposed pending further consideration of the cost situation and the possibility of a higher price still exists. When the news came over the financial tickers yesterday afternoon some slight easing developed in the 'papers' on the local bond market but with the exception of Browns, which, recently strong, dipped 1½ points net, prices merely lost the early improvement that had run to fractions of a point."

Paper Man to Direct Man-power Mobilization

Quite a number of the higher officials in the pulp and paper industry have been loaned to the government "for the duration" to assist in war work, and now it is announced that Elliott M. Little, general manager of the Anglo-Canadian Pulp and Paper Mills, is to be the Director of National Selective Service under the new plan announced by the Canadian

(Continued on page 23)

Paper Mill Employment Gains in February

Wisconsin Industrial Commission Reports Employment Rose 8.9 Per Cent In Year, Wages 27.4 Per Cent, With Average Weekly Wage $36.71 — Safety Meetings Well Attended — Other News

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., March 30, 1942—After a slight tapering off during the months of December and January, paper, pulp mill and converting plant employment began upturn in February, according to the statistical department of the Wisconsin Industrial Commission.

The number of workers increased from 23,700 in January to 23,900 in February, a gain of 1.2%. As compared to February, 1941, employment is up 8.9% for the year, since 22,000 were on the rolls a year ago.

Wages are now up 27.4% from a year ago, indicating the effect of cumulative increases in most of the mills. Weekly payrolls averaged $773,000 in February, as against $740,000 in January, a setup of 4.5%. Payrolls in February of 1941 were $607,000 per week.

Employment has now undergone an increase to an average of 43.7 hours per week, and workers are earning an average of 73.9 cents per hour, or $32.31 per week.

The Milwaukee metropolitan area kept pace with the general trend, where carton, converting and specialty plants reported 2,157 workers for February, a gain of 1.1% from the previous month. The work week averages 42.2 hours, the hourly pay rate 68.8, and the weekly pay check $29.03.

Printing and publishing showed no gains in February over January for the state as a whole, but was up 0.4% in the Milwaukee area. The total for the state is 10,000 workers as compared with 9,700 in February, 1941. Payrolls went up 0.4% from $359,000 in January to $361,000 in February (weekly average), as compared with $334,000 a year ago, up 8.0%. Workmen now average $36.24 per week and 89.1 cents per hour for a work week of 43.7 hours. Milwaukee printing and allied industries reported 3,005 workers for February in 41 plants, with average weekly payrolls of $110,325, up 1.7% from January. Average hourly rates are 92.5 cents for 39.7 hours per week, with weekly pay averaging $36.71.

Safety Meetings Largely Attended

More than 700 persons attended the closing safety meeting for the winter season of the paper mills and allied industries of Neenah and Menasha, Wis. March 25 at the Neenah high school auditorium. The meeting was devoted largely to traffic safety, and the address on "Low Ways of the Highways" was given by the Rev. T. Parry Jones of Sheboygan, Wis. He pointed to the increased toll of 35,000 automobile deaths in 1940 to 40,000 in 1941, reviewed the extent of injuries and lost time, and urged a reduction of speed and carelessness.

Reduction of fire hazards was stressed by I. F. Statz of the Wisconsin Industrial Commission at Madison, Wis. He gave demonstrations, showed an incendiary bomb casing, and described precautions to be taken in handling them.

Robert Wood of the Kimberly-Clark Corporation presided, and a concert was presented by the Kimberly-Clark band of Lakeview mill.

Less Danger of Ice Jams This Spring

Early breakup and gradual thaws have eliminated the danger of ice jams at the paper mill dams this spring. There has been a gradual runoff, eliminating the high water hazards to power facilities, and an immense storage of water has been possible in the reservoirs for drought periods. Engineers of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., say this year will be the least troublesome in some time, barring heavy spring rains. Conditions on the Wisconsin River are exceptionally favorable, with the ice going out ten days earlier than usual.

Paper Mill Workers Buy Defense Bonds

The Lakeview mill of Kimberly-Clark Corporation at Neenah, Wis., has set an example for cooperation in the war efforts. All of its 1,310 employees have agreed to purchase defense bonds, using the system of deduction from payrolls. James Palmer headed the campaign, with the assistance of a committee of 21.

Kimberly-Clark Engineers Hold Dinner

The Kimberly-Clark Engineers Club held a dinner at Hotel Appleton at Appleton, Wis., March 18. The speaker was Henry Boon, of the corporation executive staff, who spoke on problems facing the industry.

Builds Longest Hand Lift Truck

The Yale & Towne Manufacturing Company has just delivered to Johns-Manville & Sons the world's longest Hand Lift Truck. This truck is 168 inches long and is a special adaptation of the standard Yale Load King Hydraulic Lift Truck. It was specially designed to cope with problems arising in the handling of wall board and roofing.

SEVENTEEN MEN ON YALE HAND LIFT TRUCK

Printing Paper Sales Decline in Chicago

Advertising Slump Reported Cause of Definite Decline In Demand For General Printing Papers — Chicago Paper Association Holds Successful Meeting With Prominent Speakers—Other Late News.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., March 30, 1942—The Chicago paper market is beginning to definitely feel the slump in advertising and printing circles which has been a matter of grave concern to these allied groups for some time past. It is reported that orders for general printing papers slackened up quite perceptibly this week though the prices continued to remain firm. Krafts continued to find demand, holding very firm as retailing continued to set new sales records. Sulphites also found their varied uses a means of keeping orders at a peak, according to reports. The newsprint ceiling was accepted quietly locally as a further indication of the paper industry's desire to be very cooperative. Waste papers remained in heavy demand though waste paper collections here are reported to have helped lighten the situation.

Local Association Holds Fine Meeting

The Chicago Paper Association sponsored one of the most successful meetings it has ever held on March 24 when the Bismarck Hotel was the site for a congregation of over one hundred and twenty-five paper executives and guests. The regular Association attendance was augmented by the presence of many out of town guests who had attended a regional meeting of the National Paper Trade Association held at the Stevens Hotel earlier in the day and paper trade executives from Indianapolis, Louisville, Minneapolis, Cincinnati, Springfield and other points were on hand to participate in the program.

Speakers at the meeting which was designed to bring about a closer relationship between jobbers in an effort to develop effective voluntary effort during war times, included Robert Zeigler, assistant secretary of the National Paper Trade Association; John Ritchie, secretary of the Middle States Wrapping Paper Association; Frank Vaughan of Tested Papers, Inc., Corwine E. Roach of Springfield, vice president of the N.P.T.A. and others who contributed materially to the success of the meeting.

Samuel S. Weil, president of the Chicago group which provided an excellent dinner, entertainment and general program for members and their guests, presided at the meeting. He indicated that the meeting was designed to "create a better social spirit among all jobbers, to get them to know each other better and to realize that the problem of one is the problem of all regardless of size or geographical location". Mr. Weil, as well as the other speakers, pointed out the enormity of the problem confronting the paper industry and stated that inasmuch as the Government had given business the opportunity to solve many of its own problems it "certainly was the job of business to see that every thing was done to create voluntary regulation and voluntary elimination of anything which might lead to government restriction because of our own shortcomings".

The members and guests were unanimous in their comment that the March 24 meeting was one of the finest and most productive ever held here and it was agreed that the Association sponsor another even larger meeting in the near future at which the new President and other officials of the National Paper Trade Association and allied organizations would be invited to be present. "It was a significant meeting with a real result", said Mr. Weil. "The spirit was good and the cooperative attitude present in every remark indicated that the paper industry is really set to do a good job of solving its own problems".

Eastern Corp. Executive Visits Here

R. E. Will, advertising manager of the Eastern Corporation, was in Chicago this week presenting the 1942 advertising campaign of that company to the three Eastern jobber outlets—Bermingham & Prosser, the LaSalle Paper Company and Berkshire Papers, Inc. Mr. Will is on a tour of all sales offices of the Eastern Corporation, leaving Chicago for Indianapolis, St. Louis and New York City. Eastern's 1942 advertising campaign is one that provides a cue on 1942 sales activity. It is built around the retention of good will and the retention of buyer preference of Atlantic Bond, Manifest and other Eastern products.

Men in Allied Fields Honored

Executives allied with the paper industry assumed new responsibilities this week as two well known Chicago corporations added them to their official directorates. W. Irving Osborne, Jr., president of the Cornell Wood Products Company, was elected a director of the Belden Manufacturing Company, nationally known makers of wire and wire products. Mr. Osborne is also head of the Hummell and Downing Company of Milwaukee. Edwin M. Stark, chairman of Horders, Incorporated, well known Chicago stationer and office supply firm, was elected to the directorate of Butler Brothers, well known wholesale drygoods firm.

New Lines Added by Merchants

A number of Chicago distributors have added new lines during the past week. The McIntosh Paper Company added three including six products from the W. C. Hamilton & Sons Mills; Daily Sales Cover and Index from the Chemical Paper Manufacturing Company and Valley Post Card from the Sorg Paper Company. The Blunden-Lyon Company acquired the Martin Cantine Company line while Berkshire Papers, Inc., listed Glossette from the Watervliet Paper Company mills.

War Hits Local Personnel

The effects of war are being felt in the personnel of Chicago sales offices. To the list of many who have joined the armed forces is added H. L. Michaelson who has been a sales representative of Joseph Parker & Sons in this territory. It is reported that the Chicago office will be closed "for the duration" at least.

Battle for Control of Abitibi Continues

Opposition To Direct Sale of Assets of Abitibi Power & Paper Co. Determined To Continue Legal Battle—Attitude of Ontario Government Is Now Cited As Important Factor In Final Decision.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., March 30, 1942—Although the bondholders' protective committee for Abitibi Power and Paper Company, Ltd., have successfully overcome another obstacle to their plan for a judicial sale of the assets and undertakings of the company, in the decision of the Ontario Court of Appeal reported last week as having dismissed the action taken by the liquidator to stop the sale ordered by Mr. Justice Middleton for February 18, more legal hurdles are being erected by the opposition.

It was not to be expected that those interests which have been so determined in fighting for what they saw as their rights in opposition to those of the bondholders' group, would give up the fight yet. There is still the Supreme Court of Canada, and after that the Privy Council, and spokesmen for equity interests have more than once asserted their determination to carry the fight to the very last resort.

It would appear that any further action would have to come from the defendant, R. S. McPherson, liquidator for Abitibi, although it is not certain that he can appeal from the Ontario court action, but the case can always be taken to the Privy Council if that body's permission is first obtained. At least that is the opinion gathered from reliable sources by your reporter.

Attitude of Government Important Factor

What is considered an important factor in the case now is the attitude which the Ontario Government may take on the Appeal Court action in declaring the Abitibi Power and Paper Company Moratorium Act, passed by the Ontario legislature, as being ultra vires. This act was passed in April, 1941, to stay proceedings under the Abitibi bond mortgage so as to give all parties a chance to consider proposals advanced by the Ontario Royal Commission headed by Mr. Justice McTague, which investigated the affairs of the company in liquidation for the past ten years. The act stated that no new action should be taken under the bond mortgage, nor any further action taken in the proceedings then pending without consent of the Ontario Attorney-General. This act was to remain in force until December 31, 1942. It was on the implications of this legislation that most of the argument in the appeal hearing was based, with Attorney-General Conant appearing himself in support of the province's position. The five-man appeal court having found that this legislation was ultra vires the province, the Ontario government has not been slow to move to strengthen its legislation bearing on this Abitibi matter.

Legislation has already been introduced to extend the Moratorium Act of 1941, which expires with the present year, to June 30, 1943. Premier Hepburn told the legislature in introducing the 1942 Moratorium Act that it was intended to protect the company from a quick sale of its assets which "I think would be disastrous at the present time."

Other Bills Are Introduced

A further bill has been introduced before the Ontario legislature, known as the Abitibi Power and Paper Company, Ltd., Constitutional Questions Act. This act is to give specific permission for an appeal from the Court of Appeal judgment just rendered. There was some doubt as to whether any further appeal could be taken in Canadian courts from Mr. Justice Middleton's original order and the apparent objective of the latest legislation is to remove any doubt on this point.

A new sale order will probably have to be made, setting a new date for the proceedings as the February 18 date set by Mr. Justice Middleton is long since past. It is possible the Appeal Court itself may set a new sale date. One of the judges suggested this and it is understood the plaintiffs plan to urge this course in drawing up the final order. This order can be expected at any time. In the meantime, there is a considerable period of time within which the liquidator can see further action.

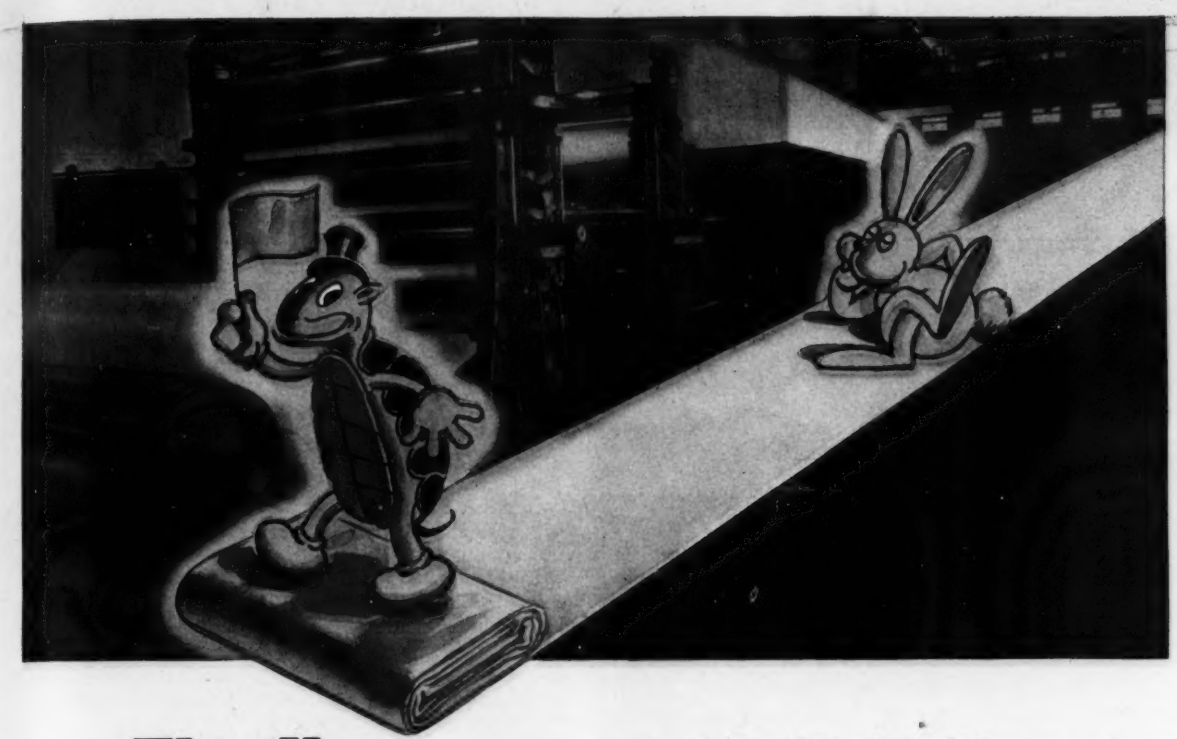
The wording of the salient clauses of the new Abitibi Power and Paper Company, Ltd., Moratorium Act, 1942, which passed the legislature yesterday, is of interest to the many people concerned with the company's affairs. Part 1 says: "Notwithstanding anything contained in section four of the Abitibi Power and Paper Company, Ltd. Moratorium Act of 1941, all the other provisions of the said act shall be and remain in force and shall have effect until the 30th day of June, 1943."

The text of the other bill, the Abitibi Moratorium Constitutional Questions Act, 1942, which also was passed yesterday, includes a preamble citing the history of the legal proceedings in Abitibi affairs, which concludes . . . "and whereas it is desirable that the question of the constitutional validity of the said act be passed upon by the court of last resort; therefore. (1) notwithstanding anything contained in the Privy Council Appeals Act, the Judicature Act or any other act or any rules or regulations made thereunder, an appeal shall lie to His Majesty in his Privy Council from the judgment of the Court of Appeal of Ontario in a certain action . . . whereby, amongst other things, there was ordered the sale of all real and personal property, assets and effects of the defendent Abitibi Power and Paper Company.

(2) Such appeal may be taken by the defendent . . . and . . . shall be allowed and admitted and thereupon all proceedings under the said order or the said judgment shall be stayed pending the determination of such appeal, the whole without the giving of any security; and the provisions of Section 8 of the Constitutional Questions Act shall apply to such appeal in all respects as though such appeal were an appeal by His Majesty in the right of the province of Ontario from the judgment of a court on a reference under the Constitutional Questions Act."

Advises Parties to Make Settlement Effort

During the final discussion on the bills yesterday,



The Hare and the Tortoise

There is a moral for every paper manufacturer in Aesop's fable of the hare and the tortoise. The hare lost because he took too much time out. The tortoise won by continuous, steady effort. • In the race for increased production begin with the wet felt. Be sure it is woven to the correct specifications for your particular type of machine and for the kind of paper or board you manufacture. This is as important as the correct specifications of your furnish. • Have all rolls clean — free from "crumbs." Set the press weight lever at the proper tension. This will prevent frequent stops for adjustment and reduce accidental injury to machine tenders. • Now speed up your machine. Keep accurate record of the steam consumption at the driers. The right felt should pay for itself with what it saves in steam. Measure the life of the felt by the amount of paper produced on it.

From the thinnest tissue to the heaviest board there is a Hamilton Felt that will do your work better, faster and at lower cost.

SHULER & BENNINGHOFEN, HAMILTON, OHIO

• Miami Woolen Mills •

Hamilton Felts

• Established 1858 •

Leopold Macaulay asked Premier Hepburn as to the possibility of the Lands and Forests Department using its powers to bring some finality to the Abitibi dispute. The premier said that the government could use the powers of that department, but that they had no complete authority. The thing to do, he said, was to give the company the right to appeal to the privy council, as provided in one of the bills.

"Financial Counsel" of today thinks it advisable that before action is taken to the privy council, "which will mean additional expense to add to the already heavy expenditures, and further delays," interested parties should get together in a final effort to reach a solution that might be recommended to all classes of security holders and creditors with assurances of acceptance, and thus bring an end to the receivership. "Such an outcome would be of advantage to the entire newsprint industry of Canada."

OPA Freezes Newsprint Prices

WASHINGTON, D. C., April 1, 1942—"Standard" newsprint prices, unchanged since April 1, 1938, will continue at $50.00 per ton for the next 60 days at least under the temporary maximum price regulation issued today by Acting Price Administrator John E. Hamm.

The new regulation (No. 16) is issued under the Emergency Price Control Act of 1942. It will go into effect on April 1, 1942, the start of the second quarter, and will expire on May 30, 1942. On or before this expiration date, a "permanent" regulation will be issued.

Late last December, International Paper Company of Canada announced an increase of $3.00 per ton in prices of newsprint for export to the United States, effective April 1, 1942. This was followed by similar announcements on the part of other Canadian newsprint mills and indications were given that American mills, as they had in the past, would follow the Canadian advance. Newsprint consumption in the United States in 1941 approximated 4,000,000 tons, of which about 75 per cent was imported from Canada and the remainder was produced by mills in the United States.

Exploration to determine the possible effects of the impending price advance was begun by OPA immediately and, almost simultaneously, discussions were opened between OPA and the Canadian Wartime Prices and Trade Board. While the 60-day regulation is in effect, discussions of the situation of Canadian newsprint mills will continue to be carried on with the Canadian authorities.

Results of operations during the first half of 1942 will be used to determine whether or not a higher price for newsprint for the second half of this year is justified.

Today's regulation covers "standard" newsprint, the definition conforming to that used by the United States Treasury Department to describe newsprint that may be brought into the United States duty free.

The price of $50.00 per ton is the "port price" of "white standard" newsprint for carload lots in rolls. For the purposes of determining actual prices, the United States is divided into 10 zones with a "base price" of $51.00 per ton set for Zone 4. The zones themselves were recommended several years ago by the Newsprint Code Authority of NRA and have been used for pricing purposes by the industry ever since.

Price differentials for other zones and for color, sheets, or special packing are "frozen" in the regulation at the levels that prevailed during the period March 20-24, 1942.

Mark-ups over the maximum manufacturers' prices in keeping with existing trade practices are granted to merchants and distributors of newsprint.

The ceiling prices set in the temporary regulation also apply to export sales, unless application for adjustment or an exception is approved in writing by OPA.

Defines Exceptions in Pulp Order

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 1, 1942—Under amendment to General Preference Order M-93, the War Production Board has continued its requirement that inventories of wood pulp be restricted to a 60-day supply, but provides for certain exceptions applying to groundwood pulp, wood pulp held for delivery under Lend-Lease, for manufacture of ordnance products and of photographic base paper, rayon or rayon staple.

Inventories of these products will continue to be controlled by the general provisions of Priorities Regulation 1. but the general 60-day limitation will hereafter apply specifically to both domestic producers and importers of wood pulp, whereas previously the board interpretation in effect applied only to domestic producers.

Horace A. Moses Honored

Horace A. Moses, president of the Strathmore Paper Company, was guest at a testimonial luncheon on March 25 at the Hotel Waldorf-Astoria tendered on the occasion of his eightieth birthday by members of the Writing Paper Manufacturers Association. On March 17 Mr. Moses celebrated the fiftieth anniversary of the founding of the original mill of the Strathmore company in West Springfield, Mass.

Mr. Moses has been for many years and continues to be engaged in philanthropic activities. He is honorary president and founder of Junior Achievement, and for many years has been a member of the National Committee on Boys' and Girls' Club Work.

Calco Chemical Co. To Build Addition

The Calco Chemical Company, Inc., a division of the American Cyanamid Company, Bound Brook, N. J., manufacturer of chemical and color specialties for paper manufacture and other industrial service, has approved plans for new addition to plant for expansion in main production department, to be two-story, about 60 x 400 feet. It is reported to cost in excess of $175,000, including equipment. Erection contract is being awarded and work will be placed under way at once.

Benton Cancell Goes to Pulp Association

Benton R. Cancell, who has been on the staff of the American Paper and Pulp Association and is well known in the industry, has resigned his position.

Mr. Cancell has now assumed the duties as assistant to Oliver M. Porter, executive director, United States Pulp Producers Association, 122 East 42nd street, New York.

Government Makes Paper Awards

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 1, 1942—Hawthorne Paper Company has been awarded the contract for furnishing the Government Printing Office with 60,000 pounds of 50% rag, 8 x 10½ white manifold paper at 22 cents. Other paper awards announced recently include the following.

Cauthorne Paper Company will furnish 100,000 pounds of 25% rag, 38 x 48½ mimeograph paper at 11 cents and Eastern Corporation will furnish 61,200 pounds of 28 x 34 white sulphite bond paper at 7.27 cents. Same firm will also furnish 144,000 pounds of 21 x 32 white sulphite bond paper at 7.27 cents and the Eastern Corp. will also furnish 69,800 pounds of 34 x 48 white sulphite bond paper at 7.27 cents, and 215,250 pounds of 32 x 42 white sulphite bond paper at the same price.

Marquette Paper Company will furnish 37,700 pounds of 32 x 42½ buff mimeograph paper at 7.75 cents and the same firm will also furnish 12,500 pounds of 50% rag, 21 x 32 green manifold paper at 24.50 cents. Walker Goulard Plehn Company will furnish 26,000 pounds of 50% rag, 21 x 32 blue manifold paper at 22.5 cents.

R. P. Andrews Paper Company will furnish 10,860 pounds of 50% rag, 26½ x 41 gray laid cover paper at 11.87 cents and Walker Goulard Plehn Company will furnish 30,000 pounds for 50% rag, 32½ x 42 buff ledger paper at 16.69 cents. Wilcox-Walter-Furlong Paper Company will furnish 6,000 pounds of 75% rag, 21 x 32 blue ledger paper at 21 cents.

Wilcox-Walter-Furlong Paper Company will furnish 75,395 pounds of 45 x 62 white sulphite writing paper at 7.05 cents and the Paper Corporation of U. S. will furnish 12,250 pounds of 50% rag, 32½ x 42 pink index paper at 16.69 cents. Barton, Duer & Koch Paper Company will furnish 77,600 pounds of 50% rag, 32½ x 42 white index paper at 15.03 cents. The same firm will also furnish 13,090 pounds of 20 x 30 gray wood bristol board at 6.25 cents and also 13,090 pounds of 20 x 30 pink wood bristol board at the same price. Also 14,025 pounds of same size yellow wood bristol board at 6.25 cents.

Coy, Hunt & Co., will furnish 10,600 pounds of yellow sulphite writing paper in 21 inch rolls at 7.9 cents and the same quantity of the same pink at the same price and 10,600 pounds of the same size same paper green at the same price.

R. P. Andrews Paper Company will furnish 350,000 pounds of 32 x 42 white sulphite writing paper at 7.09 cents and the Whitaker Paper Company will furnish 367,500 pounds of 32 x 42 white sulphite writing paper at 7.11 cents. R. P. Andrews Paper Company will furnish 175,000 pounds of 31½ x 48 white sulphite writing paper at 7.09 cents and the Whitaker Paper Company will furnish 148,000 pounds of same at 7.11 cents. Mudge Paper Company will furnish 1,064 pounds of 35 x 45 goldenrod coated book paper at 13.91 cents and the same firm will furnish the same 38 x 50 at the same price.

Stanford Paper Company will furnish 54,000 pounds of 8 x 10½ white sulphite bond paper at 8 cents and Walker Goulard Plehn Company will furnish 65,000 pounds of 50% rag, 21 x 32 green manifold paper at 22.43 cents. The same firm will also furnish 9,750 pounds of the same salmon at 22.43 cents.

R. P. Andrews Paper Company will furnish 13,000 pounds of 100% rag 21 x 32 white manifold paper at 35.4 cents and the Marquette Paper Company will furnish 22,680 pounds of 34 x 44 white sulphite manifold paper at 9.5 cents. R. P. Andrews Paper Company will also furnish 591,000 pounds of 38 x 48½ white mimeograph paper at 6.58 cents and the Eastern Corp. will furnish 34,240 pounds of 34 x 55 yellow sulphite writing paper at 8 cents.

The Whitaker Paper Company will furnish 57,500 pounds of 32 x 42 green sulphite writing paper at 8.15 cents and the Whitaker Paper Company will also furnish 46,000 pounds of same buff at the same price. Mudge Paper Company will furnish 329,000 pounds of 42 x 62 white offset paper at 7.22 cents and the R. P. Andrews Paper Company will furnish 172,500 pounds of 32 x 42 white sulphite writing paper at 6.98 cents.

Nashua Gummed & Coated Paper Company will furnish 205,000 pounds of various sizes gummed paper at 12.92 cents and Paper Manufacturers Company will furnish 285,000 pounds of 40 x 72 gummed paper at 13.5 cents while the Mid States Gummed Paper Company will furnish 275,000 pounds of 40 x 64 gummed paper at 13.9 cents. Marquette Paper Company will furnish 255,000 pounds of 40 x 50 gummed paper at 15.15 cents and the Dennison Mfg. Company will furnish various sizes gummed paper at 13.2 cents.

R. P. Andrews Paper Company will furnish 52,000 pounds of No. 2 kraft wrapping paper at 4.9 cents, 24 x 36 and the same firm will also furnish 20,000 pounds same in 36" rolls at the same price, Middlesex Products Corp. will furnish 200,000 sheets of 24 x 36 white cloth lined paper at $119.00 per M sheets and the R. P. Andrews Paper Company will furnish 150,000 pounds of white sulphite writing paper in 24" rolls at 6.48 cents. Barton, Duer & Koch Paper Company will furnish 39,000 pounds of 50% rag, 32 x 42 white manifold paper at 20.325 cents.

Mudge Paper Company will furnish 44,455 pounds of 40 x 53 white offset book paper at 7.02 cents. Whitaker Paper Company will furnish 311,490 pounds of 34 x 55 white sulphite writing paper at 7.04 cents and the Marquette Paper Company will furnish 200,000 pounds of 34 x 55 of the same at 7.04 cents. Bulkley Dunton & Company will furnish 74,737 pounds of 50% rag, 42 x 64 buff bond paper at 14.45 cents. Also Paper Corporation of U. S. will furnish the same quantity of the same size 25% rag, salmon at 14.26 cents. Whitaker Paper Company will also furnish same quantity, same size, same 25% rag blue at 14.35 cents and Strathmore Paper Company will furnish same quantity, same size white at 13.45 cents.

United Paperboard To Move

The United Paperboard Company, Inc., has leased large space in the Murray Hill Building at 285 Madison Avenue, New York. It plans to move its executive offices shortly after the first of April. This will be the first move of these offices in twenty-eight years.

four ways Westinghouse can

1 Renewal Parts Warehouses
17 warehouses conveniently located throughout the country now carry an adequate stock of frequently used renewal parts.

2 District Repair Service
33 manufacturing and repair plants are strategically located to speed repair service.

3 District Engineering Service
Experienced engineers in every industrial district are available to help solve production problems.

4 Free Help For Maintenance Men
Valuable information on how to keep electrical equipment on the job.

Vestinghouse District engineers are at your ervice to help solve electrical and production roblems. Scores of war industries are using their ervices regularly. These men know what's new n electrical equipment and how to use it. Maybe hey can help you.

Idle machines spell lost production time. The big job today is to keep present equipment running at full capacity. There are four ways of doing this and Westinghouse has prepared to help you on every one of them.

First Westinghouse has established 17 warehouses where you can obtain renewal parts quickly. Stocks on hand include those parts normally subjected to wear or burning such as contact tips, shunts, arc chutes, operating coils, armature and field coils, bearings, etc. Be sure your own stock of renewal parts is adequate to meet emergencies. When it runs low order direct from our local office.

Second Westinghouse has arranged to facilitate major repair work. In addition to the 17 parts warehouses, Westinghouse has established 33 district manufacturing and repair plants. Each of these plants is equipped to repair, remodel or recondition electrical apparatus. This includes rewinding motors, generators and transformers; replacing or building up worn parts such as bearings, commutators and current collectors; reblade and reline turbines, or remodel them for other operations.

More than 4,000 employes are now serving our customers from these 33 Westinghouse district plants alone. To save time on repair service, call our local office.

Westinghouse

TIME SAVER FOR AMERICAN INDUSTRY

Third Experienced engineers are available at every Westinghouse office to help you with your electrical and production problems. These men are constantly working with plant engineers in all types of industries. Problems that occur once in the lifetime of a manufacturer are often daily occurrences with our engineers. Thus, problems solved in one plant provide a quick answer to similar problems elsewhere. Maybe these men can help you, too.

Fourth One of the most important single group of workers in your plant is your maintenance crew. These men deserve all the help you can give them.

Westinghouse has prepared a valuable book on the care and maintenance of electrical equipment. Pocket-size, it gives helpful hints on the care of linestarters, bearing lubrication and maintenance, tips on general inspection and many other suggestions on how to keep electrical equipment on the job.

"Maintenance Hints" is free. Each of your maintenance men should have a copy. To be sure they get one, fill in the coupon now and mail it today.

All of the above services are available through our local office. A phone call will bring you any one or all of them.

Westinghouse Electric & Manufacturing Company
East Pittsburgh, Pa. J-94491

When you request copies of Maintenance Hints, your name will automatically be placed on our mailing list to receive Maintenance News.

FREE

HINTS ON HOW TO MAINTAIN ELECTRICAL EQUIPMENT

Continuous production depends on proper maintenance. This book will help. Thousands of maintenance men are already using it. Gives timely tips on the care and maintenance of electrical equipment. Published in two volumes. You can have both. Vol. I is wire-bound. Vol. II is loose-leaf so additional booklets can be added as released.

Fill in the coupon now and mail it today. When we receive your request your name will automatically be placed on our mailing list to receive Westinghouse Maintenance News—another free publication for maintenance men, issued periodically to give latest news on maintenance methods.

Westinghouse Elec. & Mfg. Co.
East Pittsburgh, Pa., Dept. 7-N
Maintenance Sales Dept.:

Please forward copies of Maintenance Hints, Vol. I and Vol. II, and place my name on your mailing list to receive both the regular Maintenance Hints bulletins and Maintenance News.

Name _____

Title _____

Company _____

Address _____

City _____ State _____

Urges Waste Elimination

Mount Vernon, N. Y., March 18, 1942

EDITOR, PAPER TRADE JOURNAL:

In your issue of February 19, an article under the title "Paper Breaks all Previous Records for 1941," there is a tabulation showing the amount of different grades of paper produced in the U. S. for that year.

In the same issue, there is an article entitled "Suggested Program for the Conservation of Critical Materials," prepared by the OPM committee. In this article, many suggestions are made covering substitutes for critical materials. In the relative order of scarcity, aluminum is given second place.

Many items are mentioned in this article that are used in relatively small quantities in paper mills but nothing was said about sulphate of alumina.

I have been informed that a shortage of sulphuric acid is anticipated in the not distant future, and therefore, any facts bearing upon the consumption of sulphate of alumina must have a definite relation to the available amount of aluminum and sulphuric acid for other uses.

Chemical substitutes for alum in paper making have already been suggested but nothing has yet been said regarding a more efficient use of sulphate of alumina in the manufacture of sized paper or the enormous wastage of this material now taking place in the paper industry.

Some estimate can be made of this using the published figures of papers produced for 1941, and referring only to those papers in which sulphate of alumina is used for paper sizing.

PAPER PRODUCTION IN THE U. S. IN 1941

Writing Papers	735,000 tons
Cover Papers	28,000 tons
Wrapping Papers	2,860,000 tons
Ground Wood Papers	617,850 tons
Paper Board Production	8,000,000 tons
Book Paper	2,000,000 tons

Of the paper board production, about 2,000,000 tons of this will be sized paper and of the book paper, probably, 1,000,000 tons. Therefore, an estimated total of approximately 7,000,000 tons of sized paper would have been made in the U. S. last year.

From a general knowledge of the amount of alum used in the manufacture of these grades of paper, I estimate that 160,000 tons will have been used in 1941, in sizing 7,000,000 tons of paper.

It is a fact that those mills which have adopted the most efficient methods of using alum in paper sizing, actually use about one-half as much to accomplish the same results, as those mills which still use antiquated methods.

It is therefore, safe to say that at least 25% of the estimated 160,000 tons of alum used in the paper sizing, could be saved with but little effort on the part of the paper industry. If this reduction were effected by the use of modern methods, the paper made would be considerably better in quality.

Forty thousand (40,000) tons of sulphate of alumina, contains 3,900 tons of aluminum and 16,000 tons of sulphuric acid.

When the shortage of alum came upon the industry during the last World War, every possible substitute was tried, and all were found to be very unsatisfactory.

At that time, the chemical knowledge relating to the use of alum in paper sizing, was extremely limited, and it was not until several years later that discoveries were made which have enabled progressive paper makers to use this material with much greater efficiency.

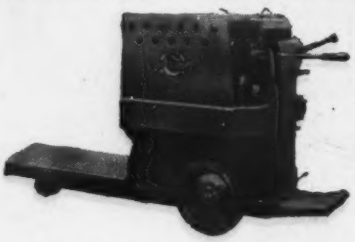
If there ever was a time when wasteful methods in the use of such critical materials should be eliminated, it is now.

Very truly yours,

J. A. DECEW.

An Economical Lift-Truck

The improved model Type "LDLF" lift-truck, manufactured by the Crescent Truck Company, Lebanon, Pa., is shown in the accompanying photograph. The manufacturer claims it to be one of the most economical lift-trucks on the market, both in first cost and in operation.



This model is designed for use with 7-inch hand truck skids and is stated to replace three to five hand truckers, at an operating cost of one-third the daily wage of a laborer.

The Crescent truck is operated by running the platform under a skid and raising the skid by means of the foot pedal. The load is lowered by means of a lever on the dash and controlled by a hydraulic check.

It is claimed by the manufacturer that this 2,500 pound capacity model is available at a little more than one-half the price for many trucks designed for the same purpose and of similiar capacity. Specification sheets may be obtained from the manufacturer.

H. S. Foley on Newsprint Committee

Harold S. Foley, executive vice-president of Powell River Company, has been appointed a member of an advisory committee under the Wartime Prices and Trade Board to consider means of simplifying production and distribution of newsprint.

In British Columbia pulp and paper production is now at an all-time peak, with most of the output being marketed in the United States. Practically all units in the industry are now carrying out expansion, Powell River Company being currently engaged in construction of a new sulphite plant and other work involving expenditure of nearly $1,000,000.

The Sorg Pulp Company will spend more than $100,000 in installation of new equipment, engine room, tanks, etc. This company produces kraft pulp at its mill on Howe Sound, formerly run by Port Mellon Operating Company.

Atlantic Carton Corp. 25 Years Old

The Atlantic Carton Corporation, Norwich, Conn., celebrated its 25th anniversary March 13. A splendid banquet was served to 240 employees of the company with their wives, husbands and guests. During the evening, Walter E. Turner, the president and treasurer of the company, paid a splendid tribute to the late Albert M. Van Wagenen, treasurer and general manager of the company, who helped largely in making the concern a success. Many service buttons were presented during the evening.

Appeals to Save Old Rope

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 1, 1942—Acting to avert a threatened shutdown of certain plants manufacturing electric insulating papers vitally needed for many war purposes, the Industrial Salvage Section of the Bureau of Industrial Conservation today issued an urgent appeal for the salvage of old manila rope.

Six plants, according to George T. Weymouth, chief of the Industrial Salvage Section, produce more than 75% of the nation's supply of insulating papers. Representatives of these plants have declared that they had on hand only a few weeks' supply of No. 1 old manila rope, from which the papers are made.

In order to stimulate the salvaging and movement of used rope as rapidly as possible, Mr. Weymouth telegraphed the managers of thirteen regional offices of the Industrial Salvage Section. The message was as follows:

"Scarcity of manila rope threatens to cause shutdown of practically all plants engaged in manufacturing electrical insulating papers, parachute flare papers, gasket papers used in manufacture of tanks and airplanes, and other special papers used by the Navy. Only solution is immediate and thorough collection of manila rope scrap normally used by steamship companies; barge, tug and ferry lines; marine stores handling boat supplies which get back old rope in exchange for new; railroad freight yards; fisheries; coal mines; quarries; electrical repair companies, yacht clubs and stevedore companies. Convey this critical shortage and need for action to all your industrial center organization committee chairmen at once."

Upon receipt of the telegrams, the regional managers were instructed to transmit the appeal to industrial salvage committees in 58 key cities. The committee, in turn, will be instructed to emphasize the old rope shortage to persons in charge of salvage operations in some 30,000 plants, mines, mills and public utilities in every section of the country. Contact has also been made by the Industrial Salvage Section with the Navy Department, for the purpose of arranging an immediate survey of all available manila rope scrap from that source.

D. S. Leslie Goes with WPB

Donald S. Leslie, first vice-president and assistant general manager of the Hammermill Paper Company, Erie, Pa., has been granted a leave of absence from that position for service with the War Production Board.

Mr. Leslie is now in Washington, serving as a temporary consultant, without pay, in the Pulp and Paper Branch. His work will be to coordinate information to be used by WPB officials in establishing policies affecting war and civilian uses of pulp and paper, and he will remain in Washington until this survey is complete.

Efficiency Engineering Co. Moves

CHICAGO, Ill., March 30, 1942—The Efficiency Engineering Company has moved to larger and more desirable quarters at 4804 Sheridan road, Chicago, Ill.

Glenn Mather Goes to OPA

Glenn Mather has been appointed Chief of the Paper and Paper Products Section of the New York Regional Office, OPA, it is announced by Sylvan L. Joseph, Regional Director.

Function of the Section is to serve as a liaison office between the pulp, newsprint, and other paper and paper products men in this region and the Washington office of OPA, to which Mr. Mather was formerly attached as Chief of the Paper Board and Paper Board Products Section.

Mr. Mather brings to his New York post a broad and all-inclusive background in paper making, converting, and wholesale distribution. His previous business connections include the Marketing Service Corporation of Baltimore, of which he was president, and the Seaman Paper Company of New York and Chicago. He also served as research director for a paper products trade association.

Mr. Mather played a prominent part in writing Paper Board Schedule No. 32 and assisted in the preparation of Schedule No. 30 dealing with waste paper. He was also instrumental in obtaining voluntary agreements with respect to maximum prices on corrugated boxes, solid fibre boxes, folding cartons and set-up boxes with over 1,500 manufacturers. Discussion of the voluntary agreements on folding and set-up boxes will feature a meeting of the industry at the Hotel Roosevelt on April 10.

At his office in the Chanin Building, 122 East 42nd street, Mr. Mather will be available to confer with paper and paper products men on problems arising in connection with OPA schedules.

Idle Machine Shop Time

E. W. Tinker, executive secretary of the American Paper and Pulp Association, sent out the following announcement which is self-explanatory:—

"The organization of a Paper Industry Machine Shop Board to function for the pulp and paper industry has been approved by the Attorney General. This Board, through its staff, will, among its functions, aid various companies in obtaining sub-contracts covering war production work. They will act as liaison between the War Production Board and the paper industry in the possible movement of machine tools to other locations where these tools can better serve the war program. We have some assurance that through the operation of the Board, the removal of tools from plants where such removal would work a hardship on the plants by leaving them without nearby facilities for repair and maintenance work, or leave those already having contracts without adequate tools, will be kept to a minimum. All industries are involved in the Government's plan for complete machine tool utilization.

"It is expected that the Paper Industry Machine Shop Board will start to work in the very near future and you will hear from them regarding definite plans as to how you will be expected to fit into the Government plan for full utilization of all machine tools.

"We have to date received 122 returns on our questionnaire regarding tools and facilities and we urge that if you have not already done so, you file your report with us so that we can assist the Board in every way possible."

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending March 28, 1942

STOCKS

	High	Low	Last
A. P. W.	1⅜	1¼	1⅜
Armstrong Cork Co.	24	23	23
Celotex Corp.	7¼	7⅛	7⅛
Celotex Corp., pf.	68½	68½	68½
Certain-Teed Products Corp.	2	1⅞	2
Certain-Teed Products Corp., pf.	28½	26	26
Champion Paper & Fibre Co.	15¾	15½	15½
Champion Paper & Fibre Co., pf.	97	97	97
Congoleum Nairn Co.	14½	14	14
Container Corp. of America	13¼	12⅞	13⅛
Continental-Diamond Fibre Co.	7½	7⅜	7½
Crown-Zellerbach Co.	10⅞	10⅝	10⅞
Crown-Zellerbach Co., pf.	79⅞	78½	79½
Flintkote Co.	10⅞	10⅛	10⅜
Robert Gair	1⅞	1⅞	1⅞
Robert Gair, pf.	10	10	10
International Paper Co.	13¼	12⅝	12⅝
International Paper Co., pf.	55¾	54	54½
Johns-Manville Corp.	60⅞	58½	58½
Johns-Manville Corp., pf.	....	....	....
Kimberly Clark Corp.	....	....	....
MacAndrews & Forbes	18¾	16¼	16¼
MacAndrews & Forbes, pf.	....	....	....
Masonite Corp.	25½	25	25⅛
Mead Corp.	6⅞	6¾	6⅞
Mead Corp., pf.	77	76½	76½
Paraffine Companies, Inc.	....	....	....
Paraffine Companies, Inc., pf.	....	....	....
Rayonier, Inc.	9½	9⅛	9⅛
Rayonier, Inc., pf.	25	24⅞	25
Ruberoid Co.	19	18	18½
Scott Paper Co.	....	....	....
Scott Paper Co., pf.	114¼	114¼	114½
Sutherland Paper Co.	18¾	18¾	18¾
Union Bag & Paper Corp.	8½	8	8¼
United Paperboard Co.	3⅛	3⅛	3⅛
U. S. Gypsum Co.	47	44¼	44¾
U. S. Gypsum Co., pf.	169	168½	168½
West Virginia Pulp & Paper Co.	15¾	15¾	15¾

BONDS

Abitibi Pulp & Paper Co. 5s '53	62⅜	61	61
Celotex Corp. 4½s '47	96¼	95½	96¼
Certain-Teed Products Corp. 5½s '48	86⅞	85¾	86¾
Champion Paper & Fibre Co. 4¾s '50	102	102	102
Champion Paper & Fibre Co.	....	....	....
International Paper Co. 6s '55	105¾	104¾	104¾
International Paper Co. 5s '47	104½	104¼	104½
Mead Corp.	....	....	....
West Virginia Pulp & Paper Co. 3s '54	104	104	104

New York Curb Exchange

High, Low and Last for Week Ending March 28, 1942

STOCKS

	High	Low	Last
American Box Board Co.	....	....	....
Brown Co., pf.	....	....	....
Great Northern Paper Co.	30	30	30
Hummel-Ross Fibre Corp.	....	....	....
National Container Corp.	8¾	8¾	8¾
St. Regis Paper Co.	1⅞	1¾	1¾
St. Regis Paper Co., pf.	109	109	109
Taggart Corp.	3	2⅝	2⅝

BONDS

American Writing Paper Co. 6s '61	80	79¾	80

M. & O. Reports Profit of $1,827,516

R. H. M. Robinson, president in submitting the report of the Minnesota and Ontario Paper Company says in part:

The balance sheet reflects accrued interest in the amount of $488,795.00 at December 31, 1941 on the income mortgage bonds of the company then outstanding; $925.00 of the latter amount relates to $18,500.00 of income mortgage bonds purchased, but not retired at the close of the year, leaving $487,870.00 of interest accrued upon the balance of $9,757,400.00 of income mortgage bonds shown as a liability on the balance sheet. To the amount of $487,870.00 should be added the further sum of $73,076.06 representing interest accrued upon income mortgage bonds purchased and retired in 1941, and upon the aforesaid $18,500.00 of income mortgage bonds, thus accounting for a total of $560,946.06 of bond interest charged against income for the year.

As indicated in the notes to the balance sheet, assets and profit and loss accounts of Canadian subsidiaries have been converted into United States currency upon their inclusion in the consolidated balance sheet and in the consolidated statement of profit and loss and earned surplus.

The consolidated net profit of the company and subsidiaries above mentioned for the year 1941, after income mortgage bond interest and after provision for taxes on income and for contingencies, was the sum of $1,827,516.73, of which $604,662.45 represented gain on purchase by the company during 1941 of its income mortgage bonds. The provision for taxes on income and for contingencies in the amount of $1,594,553.80 is reflected upon the consolidated balance sheet in the reserve for taxes on income of $871,281.82 (includes $76,728.02 carried forward from previous year) and in the reserve for contingencies which was increased from $2,000,000.00 to $2,800,000.00. In view of the many major transactions incident to and following reorganization of the predecessor company which was consummated on February 28, 1941, involving tax and other considerations in both the United States and Canada, it is the judgment of the board of directors of the company that such provision for taxes and for contingencies in the amount of $1,594,553.80 is advisable.

The Sinking Fund payment required to be made, on or before May 1, 1942, out of 1941 earnings, amounted to $1,208,616.81. Such payment had been made at December 31, 1941, inasmuch as the company, after satisfying the sinking fund payment for the year 1940 due May 1, 1941, had additionally purchased its income mortgage bonds in the principal amount of $1,423,550.00, of which $1,405,050.00 were tendered to the mortgage trustee to apply on 1941 and future sinking fund requirements and $18,500.00 were in transit. By satisfying the Sinking Fund requirements for both the years 1940 and 1941, and by advance tenders to the sinking fund and the application by the mortgage trustee of funds in its custody available for the retirement of Income Mortgage Bonds, $2,424,100.00 in principal amount of income mortgage bonds had been retired at December 31, 1941, thereby reducing the funded debt of the company to $9,775,900.00. In addition, $18,500.00 in principal amount of income mortgage bonds which the company at December 31, 1941 had purchased, but which were in transit, have since been delivered to the mortgage trustee, and applied on the balance sheet to the reduction of the funded debt of the company, which at December 31, 1941 became $9,757,400.00. The mortgage trustee at said date had on deposit the sum of $104,420.70 which was applicable to retirement of income mortgage bonds all of which except $33.31 has since been so applied.

During the year the capital stock of the Insulite Company of Finland O/Y was sold for $500,000.00 cash, and collections of $22,021.37 were received on accounts with this company. A more particular de-

HIGH ABOVE the tall-masted clipper ships . . . the scurrying ferries . . . and bustling harbor traffic, one of the wonders of the world was reared to span the East River and join Manhattan Island with Brooklyn Heights. Uniting as it did two important parts of the great and growing port of New York, succeeding generations have witnessed the immeasurable service rendered by the Brooklyn Bridge.

LANDMARK OF ACHIEVEMENT

NEW YORK AND BROOKLYN SUSPENSION BRIDGE, DRAWN BY CHARLES GRAHAM, REPRODUCED THROUGH COOPERATION OF THE BROOKLYN EAGL

The Niagara Alkali Company and the Electro Bleaching Gas Company have now embarked upon a similar union of resources and facilities to broaden and advance, by consolidating into one great enterprise, their essential services in the field of chemical supply. The quality reputation of all products . . . the fine traditions of management . . . will be maintained as heretofore, to distinguish this greater American business.

Niagara
ALKALI COMPANY
60 EAST 42nd STREET, NEW YORK, N. Y.

CAUSTIC POTASH · CAUSTIC SODA
PARA · CARBONATE OF POTASH
Liquid Chlorine

EBG NIAGARA ALKALI COMPANY

scription of the remaining European assets is set out in Note C to the balance sheet. Due to unsettled conditions affecting the remaining companies in Europe, heretofore principally functioning as sales companies, such companies have been put on an inactive basis.

During 1941 the volume of the manufactured products of the Company and of its subsidiary companies in the United States and Canada wholly-owned, directly and indirectly, was as follows: In the United States: Groundwood Specialty Papers, 31,815 Tons; Kraft Papers (including bags), 33,974 Tons; Sulphite Pulp (in excess of own requirements), 26,030 Tons; Wallboard 200,121,596 Sq. Ft.; In Canada: Newsprint, 162,224 Tons; Groundwood Specialty Papers, 1,431 Tons; Sulphite Pulp (in excess of own requirements), 6,070 Tons. In addition to the above production, 31,009 tons of newsprint were purchased from other manufacturers to satisfy contract requirements since the power shortage mentioned below prevented the manufacture of such additional newsprint by the Company or by its subsidiaries.

A considerable and growing proportion of the Company's production both in the paper and pulp division and in the wallboard division is for the war effort.

Consolidated Makes Good Report

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., March 23, 1942—The financial statement of Consolidated Paper Corporation, Limited, and subsidiary companies for 1941 shows record production and sales, slightly higher net profit and a further improvement in balance sheet position, excess of current assets over current liabilities standing at $14,056,438 at the year-end against $12,012,031 a year ago. In the directors' report to shareholders it is stated that tonnage of all pulp and paper products rose 11% over 1940, with value thereof higher by 12 per cent. Costs, general expenses and taxes increased, however, with the result that net profit was only a shade higher, $880,220 comparing with $874,520 a year ago, nil two years ago. This net was equal to 34c a common share, same as in 1940.

The directors' report noted that at the end of the year the Hearst Companies were indebted to the corporation for an amount of $1,542,706, of which $1,336,388 is represented by notes under discount and $206,318 which is included in accounts and bills receivable. The report says: "This indebtedness, in the opinion of counsel, is secured along with indebtedness to other paper suppliers and others, by various Hearst assets which have been pledged or charged to a corporate trustee in New York, in trust for this corporation and other creditors concerned. The security so provided is of such character that no estimate of its realizable value can be made at this time.

"An amount considered sufficient to provide for doubtful accounts is included in the reserve for contingencies and doubtful accounts."

A further statement was that throughout the year the corporation extended every effort to make available such of its products as were required for war purposes. While the plant and equipment of paper mills is not readily adaptable to the manufacture of anything but pulp and paper, the extensive machine shops which are necessary for their maintenance and repairs have been utilized to the fullest possible extent for the manufacture and machining of parts for war purposes.

B. C. Experiences Big Year

Improvment in operating profits during the past year amounting to nearly $1,000,000 is reported by the British Columbia Pulp and Paper Co. at Vancouver, B. C. With both its plants at Woodfibre and Port Alice operating at full capacity in the production of rayon and bleached sulphite pulp the company experienced in 1941 one of its biggest years.

Operating profits of the company last year totalled $3,252,690 before taking into account depreciation and other charges. This compares with $2,308,654 in 1940. The company's deficit at the close of 1940 was $1,232,965 and by the end of 1941 it had been reduced to $631,805, a reduction of more than $600,000. No dividends were paid during the past year. The company set aside the amount of $1,500,000 for income and excess profits taxes, but this is described as an arbitrary amount and the statements of the company are subject to adjustment pending decision of the tax liability accrued in each of the years 1940 and 1941. In the previous year the sum of $850,000 was set aside to meet all taxation.

Interest on the company's six per cent first mortgage bonds was paid in full, and on the 7% general mortgage gold bonds a full year's interest was paid and sinking fund requirements were met. Assets of the company are now estimated at $11,899,583 compared with $11,051,269 in 1940, with a deduction in 1941 amounting to $4,763,513 on account of reserve for depletion and depreciation, compared with a deduction in 1940 amounting to $4,050,829.

Additional reserves for the year 1941 include: Depletion of timber limits $5,075; depreciation of properties $737,000, further depreciation in inventory values $86,500.

Under agreement with the Canadian Government same expansion of production facilities was undertaken during the past year and special depreciation allowances have been authorized in connection with these expenditures. The government permitted the company to spend approximately $750,000 to increase production by about 80 tons daily, giving each mill a rated capacity of about 190 tons daily.

Certain-teed Earns $18.64

The Certain-teed Products Corporation and its wholly owned subsidiaries had a consolidated net profit in 1941 of $1,362,063 after all charges including taxes, according to the annual report just announced.

The profit is equal to $18.64 a share on 73,069 shares of 6 per cent cumulative prior preference stock on which unpaid dividends amount to $28.50 a share. It compares with the 1940 net of $610,383 or $8.35 a share.

Price Bros. Makes Good Report

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., April 1, 1942—The financial statement of Price Brothers and Co., for the fiscal year ended December 31, 1941, shows a substantial improvement in operating and net results combined with a further strengthening of the balance sheet position, current assets at the year-end amounting to $17.7 millions and net working capital standing at $13.5 millions, the increase in the latter being $2.3 millions for the year.

Operating profit at $5,425,917 compared with $5,169,249 a year ago and total income at $5,751,810 compared with $5,495,146. Balance of net profit was equal to $2.62 per common share vs. $2.16 per common share in 1940.

Union Bag Earns $1.70 Share

The Union Bag and Paper Corporation established new sales records in 1941, with volume 26% higher than for 1940, while net profit was approximately the same for both years, Alexander Calder, president, announced in the annual report which is being distributed today.

Net profit for 1941 was given as $2,168,313 after all charges and taxes equal to $1.70 each on 1,272,437 shares of capital stock outstanding. Net for 1940 was $2,134,391, or $1.68 a share.

Union Bag Votes Dividend

Directors of the Union Bag and Paper Corporation have declared a dividend of 25 cents per share on the capital stock, payable March 20, 1942 to stockholders of record March 16, 1942. The directors also fixed March 16 as the record date for the determination of stockholders entitled to notice of and to vote at the annual meeting of stockholders to be held on April 14, 1942.

Dennison Makes Good Report

Report of the Dennison Manufacturing Company for the year to December 31, 1941, shows net income of $816,917 after charges and taxes, equal, after dividends on the preferreds, to $1.24 a share on the combined common shares. This compares with previous year's net of $759,791, or 93 cents a combined common share.

Masonite Nets 54 Cents

The Masonite Corporation for the weeks to March 14, reports a net profit, of $328,368, or 54 cents each on 539,210 shares of common stock after providing for preferred dividends, against $302,237, or 52 cents a share, for similar period of previous year; sales, $3,846,381 against $2,596,497.

Gaylord Nets $1,349,124

The Gaylord Container Corporation for 1941, reports a net income of $1,349,124, equal, after preferred dividend requirements to $1.98 each on 539,221 common shares, compared with $1,391,039 or $2.04 a common share in 1940.

Bryant Nets 51 Cents

The Bryant Paper Company for 1941, reports a net income of $314,065, equal after preferred dividends to 51 cents each on 580,369 shares of common stock; net sales, $7,491,803.

Munising Earns $1.62

The Munising Paper Company for 1941, reports a net income of $268,467, equal after preferred dividends, to $1.62 each on 135,074 common shares, against $208,438, or $1.16 a common share in 1940.

Abitibi Earnings Up

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., March 30, 1942—Abitibi Power and Paper Company, Ltd., earnings for the month of February, 1942, prior to audit, charges for depreciation, bond interest of $275,360.73 (includes interest on overdue and unpaid interest) and income and excess profits taxes, amounted to $803,988, as compared on a similar basis, with $517,915 in February, 1941, and $1,023,703.28 in January, 1942.

Included in the above earnings for February, 1942, was $186,852 received as premium upon United States exchange. Bond interest of $275,360 for that month is exclusive of the premium which would require to have been provided to permit payment of such interest to be made in United States funds, as may be required.

Shipments of newsprint, substitute products and newsgrade sulphite pulps in February, 1942, amounted to 38,257 tons, as compared with shipments of 26,421 tons of newsprint in February, 1941, and 49,100 tons of newsprint and substitute products in January, 1942.

Present indications are shipments of newsprint and substitute products will be about 41,200 tons in March, 1942, as compared with 38,196 tons of newsprint in March, 1941.

Shipments of sulphite pulps amounted to 8,459 tons in February, 1942, as compared with 6,401 tons in February, 1941, and 8,776 tons in January, 1942.

Present indications are that shipments of sulphite pupils will amount to about 8,400 tons in March, 1942, as compared with 6,537 tons in March, 1941.

Howard Smith Increases Profits

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., March 30, 1942—The financial statement of the Howard Smith Paper Mills and subsidiary companies for the fiscal year ended December 31, 1941, shows sharply increased operating profit as the company's mills were operated throughout the period to the limit of their capacity in order to cope with a record volume of business which resulted in an expansion of 20% in total sales in comparison with 1940.

Rolland Paper Co. Nets $175,541

The Rolland Paper Company for 1941, reports a net income of $175,541, equal, after preferred dividends, to $1.43 each on 60,001 shares of common stock, against $161,724, or $1.20 a common share, in 1940.

Chlorine Amendment Order Postponed

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., Apr. 1, 1942—General Preference Order M-19, as amended February 25, relating to products containing chlorine, due to become effective April 1, has been postponed to May 1, the Director of Industry Operations announced today.

Further study of the Order has revealed a complexity of forms required in connection with certain uses out of all proportions to the amount of chlorine used in the industries involved, it was announced.

Changes in the Order which will permit necessary control and reduce the number of forms and reports involved are being studied.

$50 PRICE IS DISAPPOINTING

(Continued from page 7)

government for the national mobilization of manpower both for active service and for war industries. Mr. Little has for the past year been Director of the War-time Bureau of Technical Personnel which has been engaged in finding men for technical war positions.

Mr. Little's background as an executive and as an engineer gave him good experience for handling technical men but he is familiar, too, with the lot of the ordinary working man.

At 14 years of age he started to work as an office boy with the Abitibi Paper Company at Iroquois Falls, Ont., where from 1917 to 1922 he was pitcher on a local base ball team. Born in Beachburg, Ont., he had received his early education at Haileybury, Ont.

For 14 years he was an employe of the Abitibi Company, working in practically every department in the office and mill until he became assistant general manager.

Early in 1918 he enlisted in the Air Force and following his demobilization in 1919 took an electrical engineering course at the University of Toronto. After his graduation he returned to Abitibi, first as plant engineer and then as assistant manager.

Mr. Little joined the Anglo-Canadian Pulp and Paper Mills Ltd. at Quebec in 1932 and a year later was made general superintendent. In 1937 he became associated with the Gaspesia Sulphite Company Limited, an affiliated organization.

He now is general manager of the Anglo-Canadian Pulp and Paper mills and president and general manager of the Gaspesia Sulphite Company and has been loaned by these companies to the Government.

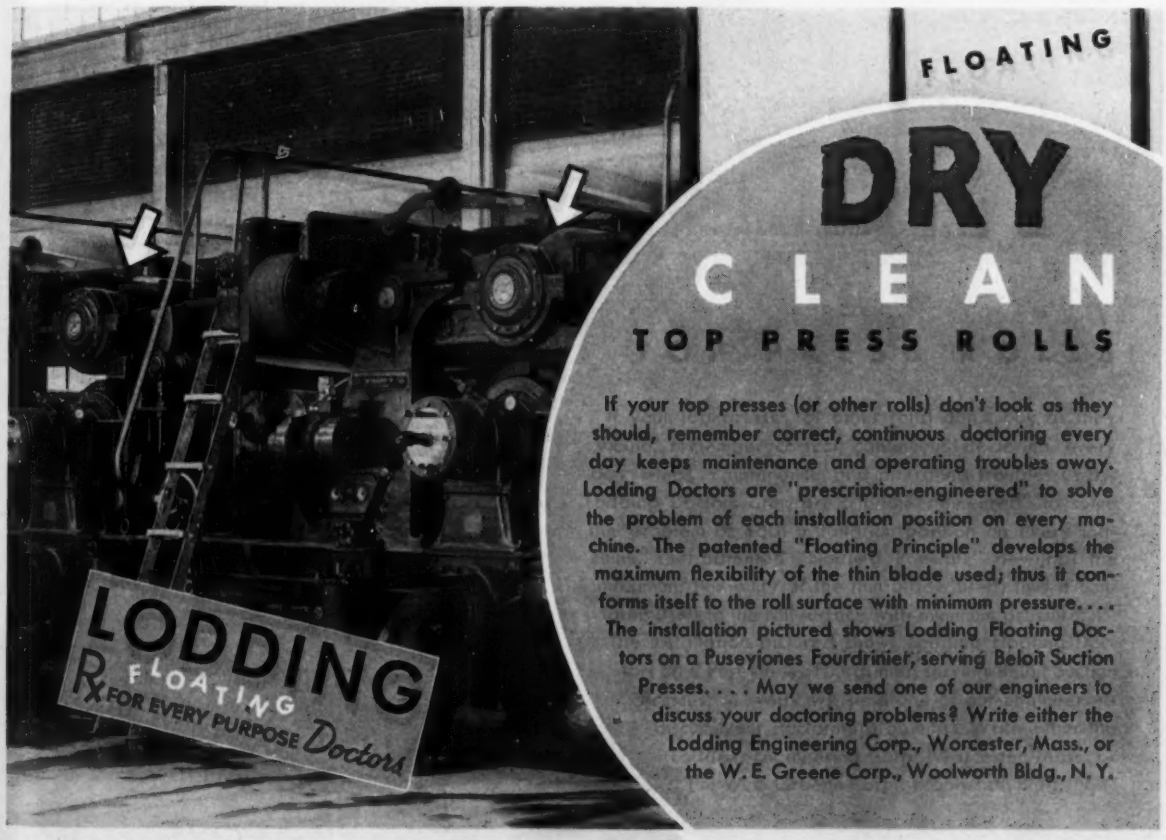
He has held a number of important offices in the Canadian Pulp and Paper Assocation and is a member of the executive committee of the Newsprint Association of Canada.

Simplified Practice for Food Trays

A new simplified practice recommendation for waxed paper, moulded wood pulp and wood types of food trays or dishes has been approved for promulgation according to an announcement by the Division of Simplified Practice, National Bureau of Standards. The recommendation is effective from April 1, 1942 for new production, and will be identified as R187-42.

This recommendation, developed in cooperation with the industry, will result in the (1) elimination of food trays too light in weight to give adequate service; (2) food trays that are excessively heavy over and above requirement; and (3) the elimination of unnecessary sizes in meager demand. It is expected that if this recommendation is generally adhered to by the industry, considerable conservation of materials will result therefrom. Calculated on the basis of square footage of container board used in each process of packing, a saving is conservatively estimated at 5,000,000 square feet of board equal to 650,000 pounds of board.

Pending printing, mimeographed copies of the simplified practice recommendation may be obtained upon request to the Division of Simplified Practice, National Bureau of Standards, Washington, D. C.



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CONSTRUCTION NEWS

Milwaukee, Wis.—The Milwaukee Lace Paper Company, 1306 East Meinecke avenue, manufacturer of lace papers and other paper specialties, has approved plans for new addition to plant, consisting of a one-story building, about 70 x 120 feet, to be used for expansion in output. Cost estimated over $50,000, with equipment. Erection contract has been awarded to Charles Salb Construction Company, Inc., 2045 North Forty-ninth street, and work will be placed under way at once. Charles F. Smith, 739 North Broadway, Milwaukee, is architect.

New York, N. Y.—The Foremost Paper Box Company, a new company in the city, has leased a floor in building at 141-45 Wooster street, totaling about 7500 square feet of floor space, and will occupy for new plant for the manufacture of paper boxes and containers. Operations are scheduled to begin at early date.

Clifton, N. J.—The Eastern Corrugated Container Corporation, 86 Thirty-fourth street, Brooklyn, N. Y., manufacturer of corrugated boxes and containers, will occupy a group of three one-story industrial buildings on Clifton boulevard, Clifton, instead of a single structure, as recently noted in these columns, and will remodel and improve at once prior to occupancy for new branch plant. Bids have been asked for structural work. Company also will build a one-story extension, about 60 x 60 feet, as another unit in the plant, for which bids are being received at the same time. Cost is reported about $75,000, including equipment, instead of smaller amount, previously mentioned. Saul Shaw & Company, 24 Walnut street, Newark, N. J., are structural engineers for project.

Wakefield, Mass.—The plant and property of the Wakefield Paper Box Company, 346 Main street, Wakefield, manufacturer of paper boxes and containers, heretofore held by A. C. Wiswall, have been acquired by W. J. Walker, Wakefield, who will operate in future. New owner is said to be planning early improvements.

New York, N. Y.—Artistic Paper Box Company, Inc., 52 Sands street, Brooklyn, N. Y., manufacturer of paper boxes and containers, has leased the main floor and basement in building at 134-136 Spring street, extending through to 84-88 Wooster street, New York, totaling about 20,000 square feet of floor space, and will occupy for expansion.

Rothschild, Wis.—The Marathon Paper Mills Company, manufacturer of manila, bond and other paper stocks, box board, waxed and processed papers, etc., has begun erection of proposed new addition to mill, recently referred to in these columns, and for which general contract has been awarded to the Permanent Construction Company, West Capitol drive and North Third street, Milwaukee, Wis. It will be one-story, about 32 x 80 feet, and will be used for extensions in chemical department. No estimate of cost has been announced. A number of sub-contracts are being let for different branches of work, including structural and reinforcing steel to Worden-Allen Company, Milwaukee; and sheet metal work to the Sheet Metal Contracting Company, Wausau.

Chicago, Ill.—A. B. Dick Company, 3040 West Lake street, manufacturer of mimeograph papers, stencils, etc., has taken out a permit to construct a new one-story pumping station at plant, location noted, for which general erection contract has been awarded to Enger Brothers, 4910 St. Paul avenue, Chicago. No estimate of cost announced. Shaw, Naess & Murphy, 80 East Jackson boulevard, are architects.

Newark, N. J.—B. Engel Paper Box Company, 123 Sussex avenue, manufacturer of stiff paper boxes and containers, has arranged for lease of entire second floor and part of first floor in local industrial building at 620-34 Market street, totaling about 20,000 square feet of floor space, formerly used by Hill Baking Company, and will occupy for new plant. Present works will be removed to new location early in April, with facilities for increased production.

Terre Haute, Ind.—The Wabash Fibre Box Company, Inc., 2000 North 19th street, manufacturer of corrugated boxes and containers, has plans nearing completion for one-story addition, approximately 120 x 320 feet, to be used for storage and distribution. Cost is reported close to $20,000, with equipment. Bids are scheduled to be asked soon on general contract. Howard Harmon, 612 Ohio street, Terre Haute, is engineer.

Charlotte, N. C.—Fire recently destroyed the one-story building at 601 South Cedar street, occupied in part by the Sutphin Waste Paper Company under lease, with entire loss reported at close to $60,000. The owner of structure, George W. Patterson, president, Morgan Heater Company, is planning early rebuilding.

Savannah, Ga. — The Union Bag and Paper Corporation, Savannah, manufacturer of kraft paper stocks, etc., has concluded arrangements for purchase of about 10,000 acres of southern pine timberlands in parts of Clinch and Lanier Counties, Ga., and will develop for raw material supply for mill. A sawmill and other facilities will be provided for operations in the future. A large output of pulpwood will be secured from the tract.

Kalamazoo, Mich.—A local mill building formerly used by the Michigan Paper Company for its coating division plant, has been purchased by the Kalamazoo Stove & Furnace Company, which will occupy for another line of production.

New York, N. Y.—The World Paper Box Company, 103 Green street, manufacturer of paper boxes and containers, has leased the main floor and basement in building at 141-45 Wooster street, totaling close to 15,000 square feet of floor

space, and will occupy for company plant and headquarters.

Cap De La Madeleine, Que. — International Foils, Ltd., manufacturer of tin and other processed metal foils, etc., has plans under way for new addition to mill for considerable increased capacity. It will be one-story, estimated to cost close to $70,000, including equipment. Bids are scheduled to be asked on general erection contract at early date.

Horizon, Sask.—Dr. D. C. Hart, Regina, Sask., is at head of a project to construct and operate a sulphate pulp mill in vicinity of Horizon, with initial plant to consist of several one and multi-story units, reported to cost close to $100,000, including equipment. It is proposed to organize a company to carry out the development.

Mexico, D. F.—The Celanese Corporation of America, Inc., 180 Madison avenue, New York, N. Y., manufacturer of rayon products, is concluding arrangements with Government of Mexico for the construction and operation of a new mill on site in vicinity of Mexico City. It will comprise several large one and multi-story processing and production buildings, with auxiliary structures for storage, distribution and other miscellaneous service. Also, a laboratory for control and other technical service, power plant, pumping station, administration building and general service units. Pulp division will be designed to use imported wood pulp. Plant will be equipped to give employment to about 4500 persons, and will require about 24 months for completion. It will be constructed on a cooperative basis with the Mexican Government and is estimated to cost approximately $5,000,000, with machinery. Of this amount about $2,000,000 will be provided by the Celanese company, $2,000,000 by the Government of Mexico, and approximately $1,000,000 by private Mexican capital. It is proposed to begin work on project at early date.

Announces Wood Pulp Committee

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., Apr. 1, 1942—The Bureau of Industry Advisory Committees, War Production Board, today announced the formation of the Wood pulp Allocation Industry Advisory Committee. David Graham is Government Presiding Officer.

Committee members are: G. B. Gibson, Union Bag and Paper Corporation, New York; George E. Dyke, Robert Gair Company, New York; H. O. Nichols, Crown-Zellerbach, New York; N. L. Nourse, Brown Company, New York; L. K. Larson, Weyerhaeuser Timber Company, New York; Charles Conrad, Rayonier, Inc., New York; F. W. Brainerd, Scott Paper Company, Chester, Pa.; S. E. Kay, International Paper Company, New York; Rex W. Hovey, Oxford Paper Company, New York; H. H. Hanson, W. C. Hamilton & Sons, Miquon, Montgomery County, Pa.; Dwight L. Stocker, Michigan Paper Company of Plainwell, Plainwell, Mich.; Douglas Crocker, Crocker, Burbank & Co. Assn., Fitchburg, Mass.; Amor Hollingsworth, Penobscot Chemical Fibre Company, Boston, Mass.

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Bauer Double-Disc Pulper Saves Stock, Cuts H.P., Increases Quality

This is an actual case history: A prominent newsprint mill has been able to show that by grinding with 75 H.P. days per ton and getting about 4% in rejects, they could improve this situation, by making the following changes:

1) Production could be increased by coarser grinding with less power.

2) The rejects, now 8% instead of 4% could be defibered in a Bauer double-disc pulper and the product included in the main furnish.

Net result: reduction in H.P. from 75 to 57 H.P. days per ton, maintaining the same original stock quality.

How are such results possible? What other stocks can be profitably defibered by Bauer? The answers to these important questions await your letter or telephone call. The Bauer Bros. Co., Springfield, Ohio.

BAUER No. 185 DOUBLE-DISC PULPER.

THE BAUER BROS. CO. SPRINGFIELD, OHIO

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

Henry J. Berger
EDITOR

Vol. 114 April 2, 1942 No. 14

New England Section. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

Delaware Valley Section. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

Lake States Section. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

Kalamazoo Valley Section. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

LABOR POLICY FAULTY

The labor policy of the Roosevelt Administration has been highly controversial and storm center of the Administration since it was inaugurated. It was off to a bad start because it was too one-sided to provide equitable rights for management as well as labor. It was and continues to be such a lop-sided piece of legislation and un-American in some aspects, that it defeats the very purpose of promoting the best interests of labor, although it does provide opportunities for labor officials to use it in a manner inimical to the common interests of the workers, management and the welfare of the country. The 40-hour week and the closed shop are the glaring major defects now being sharply criticized as deterrent to the war effort of the nation.

In 1939, under the title of "A Change Needed in Federal Labor Policy", a booklet issued by the Farrel-Birmingham Company, of Ansonia, Conn., said in part: "It will be remembered that France under the Popular Front regime tried a New Deal along the lines of our own conception. In the process of the experiment wage rates were lifted and working hours were limited to 40 hours in the week. The result was essentially the same type of economic 'squeeze' in that country which we have and still suffer. The French found that whilst the nation might endure for some time the evil effects resulting in a time of peace, it could not do so with war impending. The New Deal was scrapped by giving to a Premier dictatorial powers to do so; the foolish and uneconomic wage structure revised and the deadly 40-hour week abandoned. The threat of war forced them to do what eventually domestic unrest and depression would have compelled."

Continuing under the heading of "Democratic Action", the booklet points out that, "The legislation and pro-labor policy of the Administration now causing the steady advance of average factory wage rates in the face of a declining, or stationary, or even slowly advancing, farm price level simply intensifies the price distortion now current (1939). The obviously sensible step to take is that of halting the inflation in wage rates and factory costs and it is a step that, however superficially difficult, is more likely to be effective promptly than any other course open to the nation and surely more certain to be fundamentally sound in the long term. The necessary moves can easily be catalogued and, if sufficiently impressed upon legislators as well as upon the general public, are by no means politically impossible: (1) Immediate repeal of those provisions of the Wagner Act which make possible left-wing labor agitation and make true collective and cooperative endeavor between management and employees impossible. (2) Positive enforcement of all laws respecting the right of the individual to work when, where and for whom he pleases and those respecting private property and the keeping of the public peace. (3) Modification, if not outright repeal, of both the Walsh-Healy and Fair Labor Standards Act (as well as the Guffey Coal Act and Railway Labor Act) with respect to both wage rates and working hours, thus: (a) Maximum working hours to be at least 48 hours in the week instead of 40 or 42 (b) Minimum wages required in any industry not to be higher than 25 cents an hour."

A critical note of the national Administration in its handling of the labor problem was sounded at the meeting of the board of governors and executive committee of the Association of New York Republican Clubs, held at the Rogers Smith Hotel, in White Plains on March 28. The meeting adopted unanimously reports urging the abolition of WPA, CCC and NYA as completely nonessential to the war, and favoring imposition of a retail sales tax. The report read in part: "Recent events indicate that some of the leaders in this country, in and out of government, have lost this view (a unified war effort and prevention of a division among the American people). The outburst against the 40-hour week is an example of the growing cleavage right and left for which the Administration is largely responsible. Instead of encouraging friendly and equitable cooperation between labor and enterprise, such as exists in England, the Administration has followed a one-sided labor policy which is laying the basis for a popular reaction against labor unions which we Young Republicans deplore. If this growing cleavage between right and left is not soon bridged, America is in danger of going the way of France. Meanwhile, soaring prices, wages and profits, each outbidding the other, threaten to plunge the country into a runaway inflation of disastrous consequences."

The report continues: "We advocate the creation of a new joint war policy board, composed of the responsible representatives of the national labor and

employer organizations, with a public chairman having a reputation for fair-mindedness and replacing the present one-sided 'combined War Labor Board' composed of only six representatives of organized labor. Ceiling on prices, salaries, wages and profits so as to prevent any one group from profiting at the expense of another. Incentive payment to workers and bonuses to firms who exceed production schedules. Payment of overtime wages above 40 hours a week in the form of war bonds; payment of all dividends above the 1939 level in war bonds so as to stop inflation and give workers and stockholders an equal stake in the future peace."

Canada's Casein Requirements

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 1, 1942—Normal requirements of casein in Canada are about 2,500,000 pounds of which 1,000,000 pounds are supplied by domestic production and another 1,000,000 by imports from New Zealand according to reports to the Department of Commerce.

New Zealand is no longer a source of supply as that country is not granting export permits for casein. Most of the casein at present, both imported and domestic product, is used for war work. Consequently, certain large Canadian paper companies have been unable to secure the casein needed for coating paper. The Canadian Department of Agriculture is encouraging the increased production of casein in Canada, for which reason the recent reduction in tariff is for a temporary period only.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks, 1942		Corresponding Weeks, 1941	
February 14	103.0	February 15	89.3
February 21	103.1	February 22	90.4
February 28	103.5	March 1	90.5
March 7	102.3	March 8	91.0
March 14	101.3	March 15	91.8
March 21 (Prelim.)	*103.0*	March 22	91.7

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1941	85.6	89.7	92.2	96.0	98.7	99.3	94.2
1942	103.8	*103.4*	...	...	...	...	...

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1941	101.0	99.7	105.2	106.2	100.4	97.4
1941	...	...	...	...	...	...

COMPARATIVE YEARLY SUMMARIES

	1935	1936	1937	1938	1939	1940	1941	1942
Year to Date	67.2	76.1	89.2	66.7	79.1	86.2	88.4	*103.2*
Year Average	69.9	80.4	79.8	71.5	83.4	85.6	97.4	...

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS †

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1937	80	86	86	88	85	77	66	74	69	65	55	45	73
1938	54	60	61	57	58	56	57	66	66	70	65	59	61
1939	60	67	71	69	64	67	63	72	74	84	81	71	70
1940	71	70	69	70	76	79	72	74	72	79	77	71	73
1941	75	81	82	83	84	88	86	94	94	99	98	93	88
1942	102	*101*	..	..	..	..	..	..	..	..	..	..	..

Week ending Feb. 14, 1942—101	Week ending Mar. 7, 1942—101
Week ending Feb. 21, 1942—102	Week ending Mar. 14, 1942—100
Week ending Feb. 28, 1942—100	Week ending Mar. 21, 1942—101

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

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Continental specializes in the production of Carbon Black, and all of the technicians employed in manufacture, research and customer assistance are selected for their special experience and training in this field.

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BALL AND ROLLER BEARINGS

Section of the Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Relation of Lignin Content to the Strength of Paper and Paperboards*

IV. Microchemical Aspects of the Relation between Lignin Content and the Strength of Fiberboards[1]

By W. F. Fowler, Jr.[2] and W. M. Harlow[3]

Abstract

Since the behavior of wood fibers when pressed to form boards is probably dependent not only upon the amounts of certain constituents but also their location in various portions of the cell wall, it was thought that a microscopical study should help to better interpret the purely quantitative data obtained by Holmberg and Jahn (Parts II & III of this series). Samples of their materials including pulps prepared by different processes, and the kraft fiberboards, were treated microchemically and the latter also microdissected. Cell-wall terminology is according to Kerr and I. W. Bailey *(5);* interpretation of behavior of pulps treated microchemically, according to Bixler *(2).*

There seem to be few references in the literature to the problem of determining microchemically the relation, if any, between lignin content and the strength of fiberboards. Thin sections of fiberboard prepared by cooking chips in 4% sodium sulphite at 70 p.s.i. steam pressure, followed by grinding, were treated with cellulose solvents, and lignin solvents by A. J. Bailey *(1).* Removal of the cellulose destroyed the fiber structure, while removal of lignin caused only slight change. Bailey attributed fiber adhesion to the application of pressure sufficient to bring the fibers near each other so that surface tension operated, upon evaporation of the water. This is taken to be an application of Campbell's theory of hydration *(3)* as applied to fiberboards.

Sectioning Technique

Sectioning in water caused distortion due to swelling; it was therefore necessary to cut microtome sections from fiberboards immersed in benzene for several hours prior to sectioning. Using a heavy knife at a steep (8 degree) vertical angle, it was possible to prepare sections 12 mμ in thickness from this relatively refractory material (Fig. 1). The knife was lubricated with benzene, and the sections stored in this liquid until needed. For testing, the sections were brought down into water through several intermediate changes of ethanol and water.

Microchemical Tests

On each of the pulps sampled, the following examinations or tests were made microscopically:

(1) Appearance in normal light.
(2) Appearance between crossed Nicols of the polarizing microscope
(3) Visual effect of 72% sulphuric acid
(4) Visual effect of Schweizer's reagent, (cuprammonium hydroxide solution)
(5) Visual effect of the modified Maüle reaction
(6) Visual effect of the modified Tollen's reagent (4)
(7) Visual effect of phloroglucinol in 15% HCl

In the boards, fibers were chosen for study, which crossed more or less at right angles; this was to be certain that the fibers observed had not perchance developed next to each other in the original wood which might in certain cases be incompletely pulped

FIG. 1
Section of Fiberboard Made from White Pine Groundwood at Pressure of 400 p.s.i. and 150 Deg. C.

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 16-19, 1942.

[1] Portion of thesis for partially satisfying requirements for degree of Master of Science, of the New York State College of Forestry, Syracuse, N. Y.

[2] Formerly Graduate Assistant, New York State College of Forestry, Syracuse, N. Y.; now with the Eastman Kodak Co., Rochester, N. Y.

[3] Assistant Professor of Wood Technology, New York State College of Forestry, Syracuse, N. Y.

(Fig. 2). Microdissection was carried out on sections (immersed in benzene) by means of fine piano wire hooks fitted to the micromanipulator. Two adjacent cells were pulled apart in this manner, until they separated, while observations were made of the type of rupture which occurred.

Careful study of the microchemical properties of the various pulps and paperboards made from them showed that at least in the kraft series (paperboards were not available at the time from the other pulps) no detectable chemical changes resulted from processing the pulp into paperboards. The various tests appeared to give identical results with both the pulps and corresponding paperboards.

The tests of the kraft pulps showed that the intercellular lignin, together with that of the secondary wall, was apparently removed first, followed by that from the primary walls. Pulps below 6.25% in lignin content gave fine hair-like residues of primary wall material in both 72% H_2SO_4 and cuprammonium hydroxide, after the secondary wall had completely disappeared in these reagents.

Fiberboards produced at different pressures from both groundwood pulp and the various kraft cooks, showed no microchemical differences detectable with a microscope. Examination of fiberboard sections disclosed only the obvious result—that the fibers are more closely knit to produce greater densities when forced together with the highest pressure, as compared with those made under lower pressures. There was no evidence of lignin flowage even under the highest pressure, since the response of the fiberboard sections to the microchemical tests for lignin was the same as with the original pulp fibers from which the paperboards were made. If the lignin had become plastic and flowed, it should have been evident in the interstices of the sections or in some other way, and this was not the case.

The results of the microdissection experiments indicated that, in general, as lignin content decreased, the cohesion (and/or adhesion) of the fibers of the board increased. At high lignin content the fibers merely pulled apart with the secondary walls intact which showed that the cohesive forces between the particles in the secondary wall was greater than the cohesive force between adjacent fibers. This condition may be in part explained by the presence of intercellular lignin about the fibers, which prevented many primary wall surfaces from coming into contact with one another. As the intercellular lignin was removed, the primary walls made increasingly better contact. Finally a point was reached where the cohesive force between primary walls was greater than that between particles in the secondary walls and, therefore, rupture occurred here. Beyond this point, as the material was further delignified, the boards made from it were weaker, presumably because of partial degradation of the cellulose itself.

FIG. 2
Group of Fibers Sectioned Perpendicular to Long Axis. Such Groups Were Avoided in Microdissection

The presence of lignin and possibly polyuronides in the region of the primary walls in pulps of low lignin content indicated that either or both of these materials might have adhesive properties. It was not possible to attribute the cohesion of fibers at low lignin content definitely to either one or the other of these materials. It is possible that Campbell's theory applied here, since the removal of a large percentage of the lignin permitted closer association of micelles in adjacent cellulose walls. The most that can be said with certainty is that the property of coherence has been shown by microdissection to be a function of the chemical and physical properties of the primary wall.

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TAPPI Notes

The Lake States Section of the Technical Association of the Pulp and Paper Industry will meet at the Conway Hotel on Tuesday, April 14 at 6:30 P.M. A $25 Defense Bond will be presented to one of two technical men presenting papers. The first paper will be presented by Milton G. Schmitt of the Thilmany Pulp and Paper Company of Kaukauna, Wis. on "Mullen Tester Gauge Errors" and the second paper by Martin Van De Laarschot of the Hoberg Paper Mills, Green Bay, Wis. on "The Use of Dolomite Lime in the Preparation of Bleach Liquor." The judges will be F. A. Pascoe, Nekoosa-Edwards Paper Company, S. D. Wells, Institute of Paper Chemistry and Edwin W. Schoenberger, Instructor, Lawrence College.

W. L. Cassiday, formerly of the Michigan Vocational Training School is now with the Hummel and Downing Div., Cornell Wood Products Company, Milwaukee, Wis.

Andrew Jackson, formerly chief engineer, American Writing Paper Company is now with the Erving Paper Mills, Erving, Mass.

L. E. Russell, technical representative of the Mathieson Alkali Company has been transferred from Niagara Falls, N. Y. to Chicago, Ill.

The Empire State Section will meet at the Niagara Hotel, Niagara Falls, N. Y. on Saturday, April 25 at 6 P.M. A. G. Petroe of the Mathieson Alkali Company will discuss the Mathieson Pipe Line Chlorination Process. This will be followed by a round-table discussion of bleaching.

Application of the Electron Microscope

In the paper entitled "Application of the Electron Microscope to Problems in the Pulp, Paper, and Paperboard Industry" by George R. Sears and Evelyn A. Kregel, literature citation *17* should read as follows:

17. Kregel, Evelyn A., Appling, S. W., Shema, B. F., and Sears, G. R. A. technique for the electron microscopic examination of encapsulated bacteria. Paper Trade Journal 113, no. 18:33 (Oct. 30, 1941): *Science* 94:592 (Dec. 19, 1941).

Calcium Bicarbonate Removal from Water in Sulphate Mills*

By H. W. Frazer [1]

Abstract

Calcium bicarbonate in water causes scale in almost every operation in sulphate process mills. Several methods for scale prevention are evaluated on basis of chemical costs and usefulness of byproduct. Conditions necessary for maximum removal of calcium bicarbonate with recovery of relatively pure calcium carbonate are outlined. The character of water produced by various dosages of lime and soda ash is included. Improvements and savings in mill operation resulting from selective removal of calcium bicarbonate from the general mill water supply are listed.

It is often said that "hardness" in the water is objectionable in kraft mills. Actual experience indicates that only certain kinds of hardness usually cause difficulty in mill operations—with the exception of the boiler plant. Calcium and magnesium sulphates and chlorides, called permanent or *noncarbonate* hardness, are soluble at the temperatures and concentrations encountered throughout the mill and they do not cause difficulty by their reactions with the cooking and bleach liquors. They cause concern only in the boiler plant, and in the manufacture of dissolving pulps where ash content is highly important. Temporary or *carbonate* hardness in natural waters is usually calcium and/or magnesium bicarbonates. They are precipitated at higher temperatures often encountered in mill operation and react with cooking and bleach liquors to form insoluble products. When a solution of calcium bicarbonate contacts an alkali such as calcium or sodium hydroxide the relatively insoluble normal carbonate is produced. The crystalline precipitate adheres to metal surfaces forming an objectionable scale. The magnesium bicarbonate also reacts with these alkalies but its normal carbonate is relatively soluble and further reacts with the alkali to give an amorphous nonadherent magnesium hydroxide precipitate. Its physical form is such that scaling difficulties are not evident.

The calcium carbonate scale found in kraft mills using water containing appreciable amounts of calcium bicarbonate is troublesome and expensive—but the tremendous volume of water used in the mill makes conventional water-softening methods expensive. Reduction of treatment costs to a minimum involves the elimination of treating chemicals consumed by the noncarbonate hardness and magnesium bicarbonate since these are not objectionable.

Softening Processes

There are three general methods of water softening; sodium zeolite, hydrogen zeolite, and lime-soda. The sodium zeolite process is flexible only insofar as the hardness of the effluent is adjusted by mixing completely softened water with raw water. It is not selective as to kind of hardness removed. The hydrogen zeolite process can be made selective with regard to removal of bicarbonates only, but there is no positive control over the removal of calcium bicarbonate without affecting the magnesium. Lime-soda softening offers several choices of treatment to obtain specific results. Complete lime-soda treatment provides minimum total hardness; split treatment gives a calcium carbonate-magnesium hydrate sludge in the first stage and a relatively pure calcium carbonate sludge in the second stage, with a low hardness in the treated water. In sulphate process mills the most important variation of the lime-soda process is selective treatment with lime and a small amount of coagulant for removal of only the objectionable calcium bicarbonate and production of a calcium carbonate sludge which may be reburned for the causticizing plant. Other variations are possible, but their limited application in the sulphate process mill does not warrant detailed consideration here.

One other method of calcium bicarbonate removal should be mentioned, and that is direct neutralization with sulphuric acid. Conversion of the bicarbonate to the sulphate does not reduce the total hardness so cannot be classified as softening. It does prevent the scaling difficulties encountered when the untreated bicarbonate water is used.

Table I indicates the water characteristics, byproducts and chemicals required for several treatments of a typical water. Any of the waters produced will allow practically scale-free mill operation; however, the chemicals required and value of byproducts quickly classify the treatments from an economic standpoint.

The cost of chemicals and value of the byproducts may be expressed in terms of pulp production if we assume an average water requirement of about 60,000 gallons per ton of pulp produced. On this basis the costs of chemicals range from $1.45 per ton of pulp for the sodium zeolite down to $0.28 for the selective removal of calcium bicarbonate with lime. The latter treatment produces calcium carbonate sludge equivalent to approximately 35 pounds of CaO per ton of pulp. If there is practically no magnesium hydrate in this sludge, and if its form is suitable for economical filtration and reburning, it can be used in place of fresh lime for causticizing. The sludge from complete lime-soda softening contains an appreciable amount of magnesium hydrate which precludes its use for causticizing; however, where conditions warrant, this sludge might be reburned and used for bleach liquor.

Selective removal of calcium bicarbonate, which combines lowest treatment cost and maximum value of byproduct, has been practical only since the development of accelerated lime treatment.

The "conventional" lime softening plant consists

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 16-19, 1942.

[1] Chemical Engineer, International Filter Co., Chicago, Ill.

essentially of (a) a rapid mix for thorough dispersion of treating chemicals throughout the raw water, (b) a slow mix or coagulator to gather into settleable particles the colloidal-like precipitate formed in the first step, (c) a settling basin to remove the bulk of the coagulated particles, and (d) filters to remove the remaining suspended matter.

Maximum removal of calcium bicarbonate and formation of a sludge essentially free of magnesium hydrate requires the production of a stable water with only slightly, if any, more than the theoretical amount of lime required to react with the calcium bicarbonate. A conventional plant will not fulfill these conditions. In addition, the effluent from the conventional four-hour settling basin is not sufficiently free of suspended solids for use in the mill without filtration and it is economically impractical to provide the additional settling time required to produce such an effluent.

Accelator Process

The Accelator process, however, causes the chemical reactions to take place in the presence of previously precipitated and coagulated slurry. The treating chemicals are thoroughly mixed with the slurry, then brought into contact with the raw water in the primary mixing and reaction zone. The reactions occur on the surface of the old particles and the resulting "integrated floc" is almost immediately ready for separation (Fig. 1).

From the primary reaction chamber the circulating propeller continuously takes a flow of five or more times the throughput volume and this continuously transferred portion undergoes a slow stirring in a separate chamber to bring about final equilibrium and dampen the turbulent flow before delivery into the outer portion of the Accelator for solids separation. This period of slow stirring should not be confused with the coagulation stage of other methods for its function is not the gathering of widely dispersed particles into floc agglomerations. It provides a chamber in which the turbulent mixing motion of the primary reaction chamber is dampened and redirected; it contributes a major portion of the freedom from short-circuiting flows which often have caused difficulty in other processes.

Leaving the draft tubes as a radical flow the slurry is delivered for solids separation in the outer portion of the tank. Only one volume of throughput water

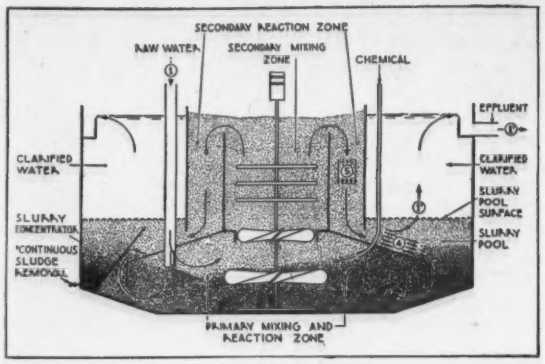

FIG. 1
Cross Section of Accelator Softener

is displaced by one volume of input water so that the remaining four or more volumes of circulation return to the primary mixing chamber for another cycle.

Maximum surface area is made available for precipation by the return of a large volume of slurry containing solids. The velocity inherent in circulation of such a large volume serves to rapidly replace reacted but chemically exhausted liquid films at the particle surfaces with fresh, incompletely reacted liquid. Application of this fundamental "film" concept is familiar in the field of heat transfer.

Characteristically the suspended solids which we call a "slurry pool" remain below the level at which the slurry is released. This slurry pool is not a stagnant suspended bed of solids maintained in suspension by the upward flow of water but a rapidly moving flow designed to return the separated solids for additional treatment. This sharply differentiates this process from other processes; some may settle the solids away, others may percolate or filter up through a suspended "sludge strainer" but only in the Accelator is clear treated water separated from a dynamic flow of slurry.

The water "squeezed out" of the circulating slurry is of remarkable clarity. Effluent turbidities consistently less 10 p.p.m. make it possible to use the water throughout the mill without filtration. This distinctive character of the floc is used to advantage in removal of calcium carbonate from the process. The heavy and rapidly settling solids are

TABLE I

	Raw Water	Sodium Zeolite	Hydrogen Zeolite	Acid Neutralization	Complete Lime Treatment	Complete Lime-Soda Treatment	Selective $Ca(HCO_3)_2$ Removal
Total hardness, as $CaCO_3$	185	5.0	88	185	112	40	128
Total alkalinity, as $CaCO_3$	117	117	20	20	44	65	60
Phenolphthalein alkalinity, as $CaCO_3$	0.0	0.0	0.0	0.0	24	45	30
Free carbon dioxide	4.0	4.0	89	89	0.0	0.0	0.0
Hypothetical Combinations							
Calcium bicarbonate	157	8	23	32	...	...	...
Calcium carbonate	...	...	...	...	40	30	40
Calcium hydroxide	...	...	...	...	...	...	...
Calcium sulphate	...	...	...	105	...	...	...
Calcium chloride	...	...	...	...	...	...	...
Magnesium bicarbonate	30	...	5	...	...	...	...
Magnesium carbonate	...	...	...	...	...	...	17
Magnesium hydroxide	...	...	...	...	3	6	...
Magnesium sulphate	82	...	82	106	82	...	82
Magnesium chloride	...	...	...	...	...	...	...
Sodium bicarbonate	...	188	...	...	...	...	...
Sodium carbonate	...	...	...	...	...	11	...
Sodium hydroxide	...	...	...	...	...	12	...
Sodium sulphate	48	145	48	48	48	145	48
Sodium chloride	28	28	28	28	28	28	28
Pounds of chemicals required per million gallons of water treated	...	4960[1]	850[2]	850[3]	760[3]	1180[3] 832[4]	655[3]
Typical cost of chemicals in cents per pound	...	0.5[1]	1.0[2]	1.0[3]	0.5[3]	0.5[3] 1.5[4]	0.5[3]
Cost of chemicals per million gallons	...	$24.30	$8.50	$8.50	$5.20 * 1360 $CaCO_3$ 80 $Mg(OH)_2$	$19.80 * 2220 $CaCO_3$ 380 $Mg(OH)_2$	$4.70 * 1030 $CaCO_3$
Pounds of sludge produced per million gallons	...	...	...	...	...	...	...

[1] 98% NaCl. [2] 90% CaO. [3] 66° Be' H_2SO_4. [4] 99% Na_2CO_3.

* Includes $1.40 per million gallons for 0.5 g.p.g. of alum coagulant at cost of $40.00 per ton.

gathered and compacted in concentrating compartments designed for minimum wastage of treated water and positive control of the solids balance of the system. The sludge discharged is easily filtered and reburned *(1)*.

The almost instantaneous production of essentially stable water with the theoretical amount of chemicals, permits "selective" removal of only that part of the hardness which causes trouble in the mill. Figure 2 shows the treated water which may be obtained with any given dosage of lime or lime and soda operating on raw water of the character indicated. The curves have been plotted from calculations. Experience indicates that the calculated values correspond rather closely to those obtained in actual accelator plant operation.

The first sloping portion of the alkalinity curve represents the removal of calcium bicarbonate by precipitation as the insoluble carbonate. The flat portion represents conversion of magnesium bicarbonate to the soluble carbonate, and the next sloping portion shows removal of the magnesium carbonate by precipitation as the hydroxide. The rise in alkalinity from that point represents magnesium hydrate left from the lime conversion of the magnesium sulfate and chloride. The drop in hardness is a consequence of the soda ash used reacting with the calcium chloride and sulfate thus formed. The amount of commercial quicklime or soda ash required to produce a water of any given hardness or alkalinity can easily be determined by locating the desired hardness or alkalinity on the proper curve and applying the indicated factor to the value obtained by reading the abscissa at that point. The curves are of value not only in further emphasizing the chemical economy of selective calcium bicarbonate removal, but also in assisting the plant operator to obtain the optimum treatment desired.

The savings made possible by selective removal of calcium bicarbonate from the general mill supply must be evaluated in the light of local conditions at each mill. The experiences of mills now using this method of treatment indicate that appreciable savings can be effected in almost every operation.

Digesters

Decreased scaling of lines and strainers gives better relief and circulation; also rate of heat transfer in exchangers is increased with a net increase in overall efficiency. The reduction in scale in heat exchangers used for indirect heating of liquor increases the rate of heat transfer, saves steam, and reduces the time out for cleaning. When water is used to make up alkali cooking liquor and for dilution to digesters a saving in soda, equivalent to the chemical required for precipitation of the bicarbonate, is effected.

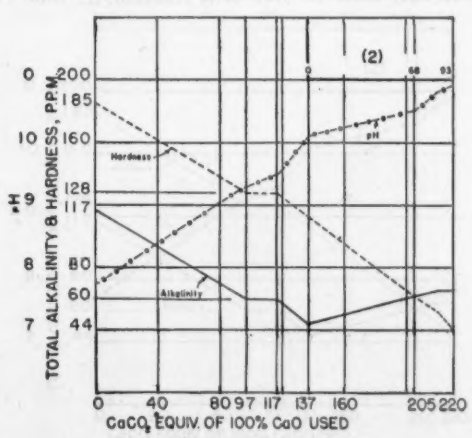

FIG. 2

Treatment Curves for Typical Water. (2 in Curve) $CaCO_3$ Equivalent of 100% Na_2CO_3 Used in Treatment. (2) P.P.M.

Evaporators

Reduction of scale formation in the evaporators allows more efficient operation by producing more concentrated black liquor with minimum steam requirement. This is interrelated with the savings in soda due to better pulp washing mentioned later and usually the two are considered together. Low vacuum obtained by use of nonscaling water in low-pressure side of evaporators results in definite steam economies.

Washers

Deposition of scale on vacuum pulp washer wires seriously reduces the capacity of the washers and the efficiency of washing. The greater volume of wash water required increases cost of evaporation and the lower recovery of soda in black liquor from the first washer results in appreciable soda losses. Prevention of the scale formation results, therefore, in a fourfold saving. First, washer capacity is materially increased; second, appreciable savings in soda result from stronger black liquor and more complete removal of soda in the first washer; third, wire life is prolonged because destructive cleaning with acid is minimized; and fourth, acid formerly used for cleaning is saved. In addition there is less tangible but very worthwhile saving resulting from elimination of shutdowns for cleaning.

Screens

Since water acts as conveyer of pulp through the screens scale formation on screens is almost as serious as on the pulp washers. In some cases the elimination of scale due to calcium bicarbonate in the water has resulted in capacity increases estimated at about 25%. Reduction of fiber losses, increase in screen life, and elimination of acid and time out for cleaning are also appreciable. In one mill, scale on the decker seriously interfered with the formation of a uniform sheet of pulp and excessive corrosion attending the acid cleaning made early replacement of the decker imperative . Selective removal of calcium bicarbonate eliminated the scale practically completely.

Machine Room

The effect of calcium bicarbonate removal on the life of felts and length of time between washings is difficult to evaluate in dollars and cents but experience proves that benefits are realized. The entire absence of free CO_2 in the treated water has been given credit for better sheet formation *(2)*.

Bleach Plant

When calcium bicarbonate contacts calcium or sodium hypochlorite, a reaction takes place with the formation of calcium carbonate precipitate. In addition to the difficulty and expense involved in this scale formation in the washing and screening operations following bleaching, this reaction also affects

the final brightness of the pulp. Experience indicates that color reversion is due to the high alkalinity of the water and elimination of the calcium bicarbonate will decrease alkalinity and color reversion. In some mills an acid stabilization treatment is employed to neutralize the alkalinity and minimize color reversion. This is, however, a relatively expensive treatment as can be shown by comparison of the amount and cost of acid used with the amount and cost of lime required. Further, the low pH and high CO_2 content of the acid neutralized is objectionable.

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2. Keller, E. L., Simmonds, F. A., and Baird, P. K. *Tech. Assoc. Papers* 23:158-162 (June, 1940).

Nonfibrous Raw Materials Report, 1941*

By E. N. Poor[1]

The nonfibrous raw materials report is an annual report of the Nonfibrous Raw Materials Committee of the TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY.

Domestic pulp, paper, and paperboard production established an all time record during 1941. Although the production ratio averaged 97% with a high of 106%, a greater rate was expected during the closing months due to added capacity. The estimate of total production of all grades is over 17,000,000 tons, approximately 20% over that in 1940.

The distribution of basic raw materials for paper production changed radically through the year. Increasing conversion from paper grade pulps to special types for use in munitions, focused considerable attention on raw materials other than pulp—waste paper, rags, and inert fillers. While vital chemicals are necessary in the preparation of the two fibrous materials, it is expected that high priority ratings will be granted.

The consumption of nonfibrous materials, in general, has increased with paper production, but somewhat disproportionately in specific instances due to (1) increased use in preparation of pulp substitutes and (2) diversion to war uses. This was particularly evident in regard to chlorine, which was placed on the mandatory priority list, curtailing its use by 30-50% for bleaching processes.

Three other important materials in the paper industry, formaldehyde, glycerin, and titanium pigments were given mandatory priority ratings.

The salt cake supply was adequate for domestic kraft production.

Caustic soda and soda ash increased with paper production but, due to their importance for war purposes, were placed on the critcal list.

Sulphur consumption was the largest on record.

Lime usage increased substantially, due to production and defense requirements.

Alum and rosin followed the productive trend. Substantial increases in alum resulted from use in water coagulation, necessitated by the extended drought.

The consumption of silicate of soda increased with general activity in the industry.

Casein domestic production was curtailed due to diversion of milk from nonedible products: starch availability was adequate for domestic paper uses; glue was placed on an allotment basis.

Titanium pigments were placed on the priority list; zinc sulphide was diverted in increasing amounts to war needs; considerable clay was imported from England and domestic supplies were adequate for increased paper production.

The demand for dyestuffs increased considerably over that which could be accounted for by paper production but up to the present, in spite of the shortage of many raw materials and chemicals, the supply has been adequate.

The use of enzymes for starch conversion continued to expand.

The consumption of synthetic resins increased althought to a limited extent due to the shortage of chemicals used in their manufacture.

Wax sizes were used in increasing amounts and were not limited by priority restrictions.

Salt Cake

The supply of salt cake (sodium sulphate) was adequate for the increase in sulphate pulp production. The use of substitute cake from soda ash and sulphur continued to expand. Considerable amounts of natural cake were imported from South America.

No salt cake was used directly in the war program. The outlook for 1942 is that there will be sufficient available to meet any reasonable expansion of sulphate pulp production.

Chlorine

Chlorine in recent years has increasingly become a great tool of chemical manufacture—e.g., ethylene glycol, magnesium, petroleum manufactures, solvents. The chlorine industry has expanded as these wants have increased, but the expansions have not caught up with demand. The whole situation may perhaps be summed up by saying that in December, 1941, over half of all chlorine produced in the country was absorbed in war production products. Obviously, that means that chlorine for nonwar items has been deeply cut. Still more chlorine capacity is building, but it is doubtful that any production derived from it will go to nonwar needs. What chlorine will be available for the pulp and paper industry in 1942 cannot be foreseen. All that can be said with assurance is that the war production program and sanitation will be served first. What chlorine is left after those needs are filled will, in all probability, be allocated by the government.

There appears to be no substitute for chlorine as a bleachine agent for the pulp, paper, and paperboard industry.

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 16-19, 1942.

[1] Member TAPPI; Chairman, TAPPI Nonfibrous Raw Materials Committee; Technical Director, W. C. Hamilton & Sons, Miquon, Pa.

There has been no change in selling price for liquid chlorine during the year 1941.

The purity of commercial chlorine continues to be of a high order. Aside from the standards set by merchant producers, it must be remembered that dirty chlorine cannot be shipped with impunity for safety reasons.

There are some new uses outside of the pulp and paper industry, but they cannot be put into practice unless it can be proved that they are absolutely essential to war needs or sanitation. Most will have to wait until the war is over.

Caustic Soda

During the year there was some curtailment of shipments to all alkali users. Currently, the industry contracted for 1942 business on the basis of an average consumption of part of 1940 and 1941. This may mean that in some cases individual users will not be able to secure all of the caustic that they could use in 1942. This entire situation, however, would be changed if the federal government should place caustic soda (sodium hydroxide) on an allocation basis. If the war continues, we may expect this to happen.

We do not know of any substitutes which can be used in the paper industry for caustic soda. Of course, it would be possible partially to replace caustic by such compounds as silicates and phosphates but these are difficult to obtain.

With the increased use of paper products by the federal government, and the replacement of metal containers by paper, we would expect that there would be an increased demand for caustic soda in the paper industry during 1942. There will also be an increased use, due to the effort being made by the government, for the recovery and use of additional quantities of waste paper. Those companies having government contracts will be able to secure a good priority number and should be able to fill their caustic requirements.

Despite the fact that there is an increased demand for caustic, we do not believe that there will be much variation in the price and certainly the industry will not sacrifice their high standards of quality.

It is difficult to say at this time what effect the increased manufacture of munitions will have on the alkali industry. Any increased use of caustic soda would tend to reduce the total quantity of alkali available to the paper industry, as well as to all other consumers.

Soda Ash

Soda ash (sodium carbonate) is being used in increasing quantities for processing materials used in the war effort. At present soda ash is on the critical list and will probably be placed on the mandatory priority list in 1942 . If such action occurs in all probability the available soda ash will be allotted to users in a manner similar to chlorine.

Since soda ash is the cheapest and most readily used form of alkali, it is difficult to find any satisfactory substitute for use in pulp, paper, and paperboard manufacture. Caustic soda is already on the critical list. It may be possible to substitute lime for some of the minor soda ash uses such as straw or rope cooking, but the increasing demand for lime in war production may affect this substitution.

Increased activity in the pulp, paper, and paperboard industry has caused a general increase in soda ash consumption. No new uses involving substantial quantities of soda ash have been developed, but trends previously discussed, such as addition of soda ash to kraft liquors for sulphidity control and salt cake replacement, have expanded considerably. Forced draft operation of existing soda pulp mills has also created additional demand for large quantities of soda ash.

Soda ash prices for 1942 continue at the 1941 level, with some adjustment for burlap bag packaging. Some difficulty may be experienced in 1942 due to slow delivery in paper and burlap bags because of heavy demand for these containers in war production. Less delay may be experienced with bulk deliveries in box or covered hopper cars, but such deliveries are conditional on available rolling stock and carrier performance. It will probably be wise to anticipate usage of soda ash and place orders with the manufacturers substantially before expected delivery. No change in quality of soda ash should occur due to wartime conditions, and the high quality of this commodity will undoubtedly be maintained.

Sulphur

In spite of demands on the sulphur industry during 1941 for the largest volume of shipments on record, over 3,300,000 long tons, both production and stocks will be able to meet any demands of the coming year. Stocks at the present time are about 4,000,000 long tons. There will undoubtedly be some further increase on sulphur demand during 1942.

Substitutes should not be required, nor do we know of any adequate substitute.

There has been little change in consumption in the sulphur industry this year aside from the large increase for all purposes.

There were no variations in price or quality during the year.

While a few new uses have been suggested during the year, no important ones have been put into commerical operation. One of the most interesting suggestions during the year was the possibility of producing chlorine from salt by the Hixson process which proposes to treat dry NaCl with gaseous SO_3.

Sulphur Dioxide

We think there is good reason for expecting that the industry's requirements of liquid sulphur dioxide can be furnished during the coming year. This belief is based on the assumption that the producers of liquid sulphur dioxide will be able to get what they need to operate their plants and that increased demand under preference priorities will not amount to so much as to affect seriously the distribution of the product, and that shipping equipment which the manufacturers are using or on which they are expecting to get delivery will not be diverted to other products.

The question of containers, of course, is an important one to be considered when compressed gases are involved. However, the indications are that a sufficient number will be available for normal requirements of the industry.

As indicated in the previous paragraph, there appears to be no need at this time to look for substitutes for liquid sulphur dioxide, which in fact, may itself be employed to replace certain materials not now available.

No industry data are available; however, there probably has been little change in the consumption of liquid sulphur dioxide by pulp and paper mills when comparing this year with 1940. There is no ques-

tion, on the other hand, but that the consumption for 1941 would have been considerably greater than for 1940 if chlorine were still available in unlimited quantities. There are several mills where bleaching of kraft pulp was anticipated and expensive plants erected for this purpose; due to the curtailment in the quantity of chlorine available, however, these mills have not commenced bleaching operations as scheduled.

There has been no change in the price of liquid sulphur dioxide during the past two or three years.

It is not expected that war conditions will affect the quality of liquid sulphur dioxide.

In addition to its use in connection with bleaching processes, and for the fortification of cooking acid, liquid sulphur dioxide is now being employed in certain cases to replace alum where this latter chemical has been used for pH control. We understand that alum is difficult to obtain at the present time, at least in certain areas, and the ability of liquid sulphur dioxide to replace this material is one of the inherent advantages.

Lime

New plants to aid in our war production program have required considerable lime tonnage. Pulp and sugar mills, chemical plants, and steel mills have all stepped up production, increasing their requirements of chemical lime. As a result the surplus chemical lime tonnage is small.

Lime prices increased little during the first eight months of 1941. In 1942 lime prices will be higher. This increase is necessary to enable the lime manufacturer to maintain his plant and keep producing to capacity, because of higher cost of fuel, labor, and supplies.

Lime is an important raw material to our war program, and the lime manufacturer desires the cooperation of the consumers. For example, in some cases where very strict specifications of the physical preparations have been required it may be that such specifications could be adjusted which would help speed up the shipping and filling of chemical lime orders.

We suggest to all industrial plants who consume lime daily, to keep their storage bins well stocked. All railroads are taxed very heavily with shipments, and railroad equipment suitable for the shipment of lime is not going to be plentiful. The deliveries of lime are not going to be as prompt as they were before the war program went into effect.

Let it be stated here that the lime manufacturers are in a position to take care of the demand, but it will require the full cooperation of all consumers, especially the heavy lime tonnage accounts.

Sodium Aluminate and Alum

The production of alum in the United States has increased appreciably in the last two years. There has been an increased demand due to a considerable increase in paper production, and the extended drought resulted in an unusually large consumption of alum for water coagulation. The present demand is such that the alum production capacity is taxed to the limit and in some cases there is an appreciable quantity on back orders. The actual availability fluctuates in various localities but as a whole the situation is tight. This is not because of any curtailment of alum production, but because of the substantially increased demand.

In regard to alum raw materials, surveys indicate that the total United States production of sulphuric acid is probably sufficient to take care of the present demand. There is, however, a shortage of economical sulphuric acid in certain localities. This is due to the high sulphuric transportation costs that would be necessary to balance local shortages.

The utilization of spent acid from munition plants may be an important factor in counteracting a sulphuric acid shortage for industrial use.

Bauxite, the other alum raw material, comes from South America and domestic deposits and the mining of domestic ore is being stepped up considerably. Due to the limited amount of known domestic deposits we will continue to import bauxite from South America and the controlling factor here is transportation. Freight rates have increased and present conditions necessarily make shipping somewhat uncertain.

Sodium aluminate production has been increased during the past two years. Although the increased demand caused its availability to fluctuate, it does not appear to be especially short at the present time.

Some of the possible substitutes for alum in the paper industry are:

a. Ferric sulphate which mill trials have demonstrated can be substituted for alum on some grades of paper for sizing as well as for water coagulation.
b. Sodium aluminate often may be substituted for part of the alum for sizing or water coagulation.
c. Sulphuric acid often may be substituted for a part of the alum.
d. Aluminum chloride, according to laboratory tests, will size paper in a manner similar to alum although it presents a corrosion problem.

Sodium aluminate substitutes would include the common alkalies with alum or alum substitutes except of course sulphuric acid.

The consumption of alum by the paper industry has increased this year although the consumption per ton of paper is probably less because of the limited amount available.

The consumption of sodium aluminate in the paper industry has increased due to the increased paper production as well as the fact that the number of mills using it have increased.

It is reported that some of the large alum producers have found it necessary to make nominal increases in alum prices during the past year. Sodium aluminate prices have not increased materially during 1941.

There does not appear to have been any significant change in the quality of alum or sodium aluminate during the past year.

We do not know of any significant new uses for either alum or sodium aluminate in the paper industry.

Rosin

Consumption of rosin in the form of rosin size reached a very high level in 1941, in line with the expanded level of paper and paperboard production. Fortunately, there has been, and still is, an abundant supply of rosin. One important change has, however, been a downward trend in the supply position. For several years conservation and loan programs have resulted in increasing stocks of rosin in the hands of the government, but in 1941 production declined and consumption increased. Important

Lease-Lend shipments have also been made with the result that former huge reserve stocks have shown a material decline. It is expected by many that, by the end of 1942, supplies will be down to what would be called normal stocks.

The loan program, similar to those of recent years, continues to be a dominating influence. Loan values were increased during the recent producing season and the loan values announced for 1942 are at a still higher level, which has resulted in higher prices but rosin remains a relatively cheap material.

Prospective total supplies appear adequate, even though former excessive reserves are being liquidatd much more successfully than was expected, and outside of possible transportation difficulties the only problem may be in obtaining certain specific grades of rosin, particularly the lower grades and the extremely high grades.

Sodium Silicate

The extremely unsettled conditions which prevail at the present time prevent any confident forecast of the effect which the war may have upon supplies of sodium silicate. Raw materials were available in quantities sufficient to satisfy sodium silicate demands during the year 1941. The question of substitutes for silicate of soda thus far has not arisen. The constantly changing conditions imposed by the war program prevent any predication regarding the status of raw material supplies during the months to come.

The consumption of silicate of soda during the year of 1941 has closely followed the general business trend, being higher during 1941 than in previous recent years.

The prices of the various grades of sodium silicate, however, remained quite stable during the past year.

The requirements of increased consumption of this commodity have exerted tremendous pressure upon production facilities but all of the usually high standards of plant control have been maintained thus resulting in a complete maintenance of the high quality of this commodity.

No important new uses for silicate of soda in the paper mill have emerged during 1941. Of new importance is the present application of an earlier discovery. The shortage of chlorine for bleaching has aroused interest in a development of some years ago in which it was found that silicate of soda could be effectively used in the bleach to permit reduction in the chlorine requirement. A number of mills are currently investigating this use in order to adapt the development to their individual needs.

Casein

Casein continues to hold its number one position as an adhesive material in coated paper production. Domestic production has been curtailed due to the program established by the government for the diversion of milk from nonedible to edible products, which was brought about by the heavy demand for export to England. However, imports of Argentine casein have increased and for the first eight months of 1941 amounted to 27,700,000 pounds. In other words, the supply of domestic and Argentine has been adequate to take care of the increased production of coated paper, up to the time that this report was written (middle of November).

During the past few months the mills have been substituting starch and soya bean protein for casein in the cheaper grades of coated paper due to the high price of the latter product. This type of substitution should go a long way in alleviating any shortage of casein for those grades of paper in which other types of adhesives are not suitable for one reason or another.

The CL price on domestic casein has advanced from 13c in January to 29c per pound delivered in November. This increase can be accounted for by the heavy demands for edible milk products, both for domestic consumption and export.

Starch

In a forecast for the next year, there should be ample starches for all domestic papermaking purposes, and we can see no particular indication at the present time of a shortage. There are a few modified starches requiring certain chemicals in their manufacture on which the supply may be short over the next few months, but substitutes for those few starches in the modified class in which a shortage may occur will be available.

Approximately 75 to 85% more cornstarch was used in domestic papermaking in the first 10 months of 1941 than in the corresponding period of 1940. This includes both modified and native starch.

The changes in the price of cornstarch this year have been very slight. Starch has increased in price about 5% since the first of the year. There have been no price changes in the last 7 months. The indications are for fairly stable prices in the near future if there are no unexpected upsets in our economic picture. However, it is logical to anticipate a tendency toward moderately higher prices due to increases in general costs.

The same high quality of starch will be maintained in the future and no changes will be made.

No entirely new uses have been developed for starch in the paper industry during the past year, and none are anticipated in the next few months. However, the papermaker has found that the increased use of starch has been helpful in the present emergency and this has resulted in the use of increased amounts of starch in the beater, tub, and on the calenders. The use of starch adhesives has increased as manufacturers have found that starch will produce a fairly water resistant combined board. The paper coater has started to use starch in large quantities on regular brush coaters, and starch is being used in increasingly large quantities for making machine-coated papers. Development work has resulted in improvements in certain types of modified starches and this has resulted in better results for the paper manufacturer.

Glue

The demand for glue is running greatly in excess of supply and as raw materials for making it are not available in unlimited quantities, it is impossible to increase production to satisfy the entire needs of the trade. In preference to selling the available glue, at a premium, to certain customers all production (since Jan., 1941) is distributed on a quota arrangement, based on purchases made during the past two years. All customers are receiving as much glue as purchased on the average during 1939 and 1940.

Although animal glue is essential to the manufacture of a great many war items, and consumption will be increased in these particular lines, glue production has been increased to some extent and a continued reduction of its use in nonessential items,

should enable the manufacturers to continue supplying the needs of the paper trade to the extent of their average purchases for 1939 and 1940, even though war needs increase.

The foregoing policy has the approval of W.P.B. and it is our understanding, has been generally accepted by the glue industry. In pursuing this restricted selling policy, the consumption of glue in the paper industry is practically the same as it was during 1939 and 1940. In cases where allotments are not sufficient to cover the actual defense requirements additional glue may be obtained as directed by W.P.B.

The glue, that is manufactured under present conditions, is made from the same materials and with the same care and supervision as during normal times. The resultant product is of the same high quality and of uniform strength and working properties. There is only one sound way to manufacture glue and, in times like the present, the quality is not impaired through the substitution of inferior materials and workmanship.

The feeling on the part of manufacturers is to maintain a price level attractive to the customer. In keeping with governmental control of prices affecting materials essential to the war program, an adjustment in the costs of raw materials for hide glue manufacture late in January, 1942, provided an immediate revision of hide glue prices back to the level of January, 1941. At the moment this report is being prepared there has been no change in bone glue prices.

As far as substitutes for animal glue are concerned, paper manufacturers are familiar with the types that have been advocated for the different operations in which glue is used. It is our feeling, shortages of other materials, entering into the manufacture of paper, will bring about an adjustment in the production of paper that will eliminate the necessity of obtaining substitutes for animal glue.

In summing up the situation, we feel, any curtailment in the production of paper, will be brought about by other factors and as a result, the allotments provided for the different mills, will be sufficient for their needs. The additional glue available through curtailment of nonessential items and increased glue production, will supply the additional war uses.

It is not expected that glue will be available in unlimited quantities during the war period hence the use of it in items and operations not previously employing it, is not advocated. All manufacturers are subject to conditions beyond their control including acts of the government that might interfere with production or distribution. This condition is not anticipated but none of us know the proportions the war situation will reach and it is impossible to make any definite commitments and all statements must be made with a big "IF" attached.

Titanium Pigments

Because of the war program the availability of all titanium pigments in the coming year will be definitely limited. During the past few months suppliers of titanium pigments have found it necessary to put their customers on an allotment basis. However, there has recently been issued an O.P.M. General Preference Order M-44 "To Conserve the Supply and Direct the Distribution of Titanium Pigments", which will further affect the availability of pigments for all nonwar purposes.

Possible Substitutes: There is no material approximating titanium pigments for producing opacity, whiteness and brightness in paper. Even if such materials were possible their availability would be limited also.

The change in consumption of titanium pigments by the paper industry this year has been upwards just as it has been in past years. This has been brought about by the use of pigment in more grades of paper and by increased production in the grades of paper which were already pigmented.

The price of titanium pigments was increased slightly on January 2 and July 1, 1941. No prediction can be made as to future price variations.

There were no marked variations in pigment quality and uniformity has been carefully maintained throughout the year. A titanium dioxide having greatly improved water dispersing properties was produced and was regularly supplied to the trade.

New uses for titanium pigments in the paper and paperboard industry especially during the last half of the year were greatly curtailed by the fact that only a limited supply was available and that this supply barely sufficed for old uses. The use of pigments for coating was greatly extended, especially in the field of coated opaque waxing stock.

Additional domestic production of ilmenite is being developed which may tend to alleviate the present restrictions.

Zinc Sulphide Pigments

The war will have a definite affect upon the availability of zinc sulphide pigments during 1942, inasmuch as great quantities of them are required in numerous products. Due to the demand, it is impossible to say at this time what tonnage of zinc sulphide pigment will be used in paper products.

There were no new uses during the past year to report, nor was there any variation in the quality of the zinc sulphide pigments.

Clay

A substantial tonnage of clay was imported from England during 1941, to supply United States and Canadian needs. The outlook for the coming year is favorable.

Prices were slightly over 1939 but not alarmingly high—in most cases about 50 cents per ton which is the result of the increase in ocean freight rates and war risk insurance.

Domestic clays continue to increase in consumption.

Dyestuffs

The war effort plus civilian requirements has caused an unprecedented demand for dyes during the past year. As a matter of fact, the demand has been so great that the production of dyes during 1941 has been greater than ever in the history of the domestic industry. In addition to the huge requirements for textiles for military purposes, the consumption for civilian uses has been greater than ever before. At present it appears that this demand will continue for sometime to come.

The extraordinary demand, difficulties in obtaining new equipment and replacements, the shortage of certain raw materials and chemicals, some of which have come under government priorities, have created an exceedingly difficult production problem for the manufacturer. Besides, such important defense materials as aluminum, zinc, aniline, toluene, phthalic an-

hydride; alcohols, and acids, to mention a few, are also basic necessities in the manufacture of dyes. Consequently, adequate supplies of these are vital to the maintenance of the present high rate of production.

While the future is entirely dependent on the war program, the dyestuff consuming industries are of such importance to the national well-being that it is believed everything possible will be done to insure adequate supplies for the dyestuff industry. The industry has been operating at capacity and will continue to do so if the necessary raw materials and chemicals are available. Deliveries of dyes to the paper industry have so far been approximately 45% greater this year than in 1940 and we believe this increase is general throughout the industry. All of this large production has not gone into consumption, as it appears that mills which heretofore have carried little or no inventory have shown an inclination to build up stocks to last several months. Part of the increased consumption has been due to the chlorine situation, larger quantities being used to counteract the dull furnishes.

There are no materials which can be substituted for dyes for the paper industry with the possible exception of pigments. However, these are in the same category as dyes and do not offer a solution to the problem. If shortages occur in certain dyes, substitutions will have to be made with those available but each case will be a problem in itself and will have to be solved as the situation arises.

Prices of paper dyes have not increased in spite of the increased production costs. Despite higher costs it is not expected that there will be any general advance in prices for the first quarter of next year.

High standards of quality have been maintained even though the producers have been operating at a high rate of capacity.

No new uses of importance have occurred because the industry has been busy in meeting the heavy demand for existing standards.

Plasticizers

Two questions are now uppermost in the minds of users of placticizers:

"Can I get enough of my usual materials, and at what price?"

"What can I substitute for my present softeners if they become partly or wholly unobtainable?"

The answers to these questions cannot be given in as great detail as could be desired, nor can predictions for the future be made with any real hope of accuracy. The best information available at present is set forth below and should be read with the understanding that the picture may change at any time.

Glycerine

Effective November 10, 1941, ceiling prices were set by the O.P.A. as follows:

C.P.	Glycerine (98%), drums, carload	$0.18-¼ lb. del.
C.P.	Glycerine (95%), drums, carload	.18¼ lb. del.
Dynamite	Glycerine, drums, carload	.18¼ lb. del.
High Gravity	Glycerine, drums, carload	.18¼ lb. del.
Yellow Distilled	Glycerine, drums, carload	.18¼ lb. del.

Excess freight zones were established with the above prices applying to Zone A, which is all points east of, and including, North and South Dakota, Nebraska, Kansas, Oklahoma, Texas and parts of Wyoming and Colorado. Zones B and C are west of these points and delivered prices are somewhat higher.

Buyers and sellers of glycerine are required to keep complete records of all purchases and sales, and producers must report on the state of their inventories at regular intervals. A monthly statement of compliance is also required from all glycerine producers and dealers.

The W.P.B. order directs all glycerine producers and dealers to restrict deliveries to direct war requirements, to medical and pharmaceutical uses, and to nonwar, civilian industries only when lack of glycerine would force a plant shutdown. Sworn statements of actual need must be made by purchasers in all cases. The intention is obviously to concentrate glycerine stocks in the hands of producers rather than consumers. It is believed that this action will greatly clarify the situation and should make it easier for a bona fide purchaser to secure delivery.

In December, an amendment was issued which will result in somewhat higher freight rates being added to the delivered prices at some points.

Diethylene glycol

The current price in drums (carload) is $0.14 lb. f.o.b. works.

No government restrictions have been placed on this material. However, there is difficulty in securing supplies and deliveries may be delayed. This is due to increased demand as well as to scarcity of chlorine, which is essential to the manufacture of diethylene glycol.

Invert Sugar

Prices are affected by the price of cane sugar. Current quotations range from $0.05 to $0.05½ lb. f.o.b. works.

Invert sugar along with cane and beet sugar, is subject to a ruling by the director of priorities. This ruling at present directs all producers of these products to refrain from delivering to a consumer, during any calendar month, more goods than he received during the corresponding month in 1940. Nor may a consumer accept delivery in any month of an amount in excess of that received during the same period in 1940.

After January 1, 1942, no consumer may accept goods until he has filed a report with the W.P.B. on Form PD-206, or other forms that may be required.

After January 15, 1942, no producer or dealer may ship goods to a consumer without first receiving an affidavit showing that the quantity ordered is necessary and complies with the limitation stated above.

It is probable that this ruling will be amended so that both established and potential consumers of invert sugar will be able to secure adequate supplies. In this connection it is recalled that, during the first World War, invert sugar was released to many industries in recognition of the fact that they were thus enabled to eliminate the use of glycerine and other essential war materials. Some such arrangement is likely to be made for the duration of the present war emergency.

Corn Sugar and Syrup

Current Prices: Corn sugar: The situation is very confused. Corn syrup: Tank cars, $3.20 cwt. delivered New York.

Consumption by paper mills is reported to have increased. At the present time producers are having no difficulty in filling orders for corn syrup and expect no immediate price changes.

So far there have been no government restrictions, although a large amount of corn has been requi-

sitioned for Lend-Lease purposes. Considerable thought has been devoted to plans for producing fuel alcohol from corn. This may have some future bearing on the situation.

SORBITAL

The current price in drums is $0.17¾ lb. f.o.b. works.

The manufacturers report that they are filling small orders fairly promptly but that delay may be expected on larger lots. A new plant to be in operation in February should greatly increase the availability of this relatively new plasticizer.

Synthetic Resins

The paper industry has, during the past year, continued to use a limited but increasing amount of different synthetic resins as sizes in the manufacturing field and as coating in the converting field. Of the resins, the urea formaldehyde and alkyd types are probably most widely used. In both types, the shortage in phthalic anyhdride and formaledhyde have restricted the amounts of resin available for civilian application. Prices, on the whole, have increased only slightly.

Synthetic resins have already proved a useful tool to the paper manufacturer. Development work now in progress in many mills will increase their scope of application which has been limited heretofore to more or less specialized uses.

Enzymes

Use of enzymes for starch conversion during 1941 continued to expand. Diastatic enzymes in the paper industry are utilized for tub and calender sizing, for coating, and for laminating. The coating field is using more and more starch for pigment binding and much emphasis is being placed on the conversion of the starch with enzymes. The chlorine shortage has resulted in the substitution of much enzyme-converted starch for the chlorinated starches. Corn starch is now the major one being converted. There was no shortage of enzymes and none is anticipated because their manufacture is entirely domestic and few critical raw materials are needed in their manufacture. Several new enzymes appeared during the year, offering greater economy and efficiency, particularly for corn starch conversion.

Wax Sizes—Foam Killer—Pitch Dispersants

During the past year the consumption of dispersed petroleum waxes by the paper and paperboard industry has continued to increase, although no actual figures on total consumption or increase are available.

No completely new developments in this field have been brought forth in 1941 but suppliers have been constantly working on modifications looking toward improvement of stability, convenience of handling, economy of use and effectiveness.

One type of product that has received considerable attention is the nonaqueous solid wax composition that may be emulsified in water at the paper mill without the addition of other chemicals. The economy of shipping a water-free product has long been recognized and further development along this line may be expected in the future. Increased quantities of such compounds are already in use for both surface and beater sizing.

Considerable additional information concerning the application of wax sizes has been gained during the past year. The use of wax size in the beater to secure resistance to lactic acid has been better worked out and new knowledge has been acquired concerning the effect of wax sizes on moulding and shaping of paper articles and on the drying of the paper on the paper machine.

In the field of surface sizing benefits have been derived in some cases from the substitution of calender applications of wax emulsions for dry waxing subsequent to paper manufacture. The advantages are (a) as good or better lactic acid resistance, (b) less discoloration of the board, (c) less injury to resistance to hot aqueous liquids, and (d) lower cost. Progress has also been made in securing resistance to wet rubbing with combinations of wax emulsions and synthetic resins.

There has been wide fluctuation in the price of paraffin wax in the last year. At the beginning of the year white crude scale wax was selling at 8c per pound and in the first quarter decline to 2.75c. In March the price began to rise and by September had reached 6.25c, which continued through November. Effective December 1, OPA established a price ceiling of 4.25c on this commodity and automatically the price dropped to that level.

Refined paraffin, m.p.125-127 deg. F., has been quoted at 5.7c steadily until the last quarter of the year, when slight fluctuations took place. The market closed the year at 5.2c (no par). Amorphous waxes have remained steady throughout the year. Regarding the supply of these waxes, contract requirements have been met on all types, but throughout most of the year odd lots have been scarce if at all obtainable. As far as it is possible to foretell, it appears that supplies of all grades will be adequate but not much in excess of demand unless some new important application develops. So far no priority restrictions have been placed on petroleum waxes.

Foam killer, pitch dispersion materials, general emulsifiers, and other production aids, increased substantially.

Nonfibrous Raw Materials Committee

Alum and Sodium Aliminate	H. E. Duston, Monsanto Chemical Company, Boston, Mass.
Caustic Soda	R. L. Carr, Mathieson Alkali Works, Inc., 60 E. 42nd street, New York.
Chlorine	S. W. Jacobs, Electrobleaching Gas Company, 60 E. 42nd street, New York.
Clay	V. B. Case—Paper Makers Importing Company, Easton, Pa.
Dyestuffs	G. F. Schaumann, E. I. DuPont de Nemours & Co., Wilmington, Del.
Enzymes—Resins	J. J. Thomas, Rohm & Haas Company, 14 Scott street, Springfield, Mass.
	P. B. Taft, Resinous Products Company, Philadelphia, Pa.
Glue	R. Tutt, Peter Cooper Corporation, 1011 Diamond St., Philadelphia, Pa.
Lime	W. F. Swan, Standard Lime & Stone Company, Baltimore, Md.
Plasticizers	N. R. Pike, The Nulmoline Company, 120 Wall street, New York.
Rosin—Casein	J. C. Dieffenderfer-Hercules Powder Company, Wilmington, Del.
Salt Cake	Mathieson Alkali Works, 60 E. 42nd street, New York.
Soda Ash	N. C. Weil, Solvay Process Company, Syracuse, N. Y.
Sodium Silicate	R. Morehouse, Philadelphia Quartz Company, 121 S. 3rd street, Philadelphia, Pa.
Starch	E. Stein, Stein Hall & Co., 285 Madison Avenue, New York.
Starch	J. P. Casey, A. E. Staley Manufacturing Company, Decatur, Ill.
Sulphur Dioxide	F. G. Calkin, Virginia Smelting Company, West Norfolk, Va.
Sulphur	D. B. Mason, Freeport Sulphur Company, 122 E. 42nd street, New York.
Titanium Pigments	W. R. Willets, Titanium Pigment Corporation, 99 Hudson street, New York.
Wax Sizes	R. W. Kumler, American Cyanamid & Chemical Corporation, 30 Rockefeller Plaza, New York.
	J. H. Fritz, National Oil Products Co., Harrison, N. Y.
Zinc Sulphide Pigments	R. Davison, New Jersey Zinc Company, 160 Front street, New York.

Imports of Paper and Paper Making Stock

Giving Manifests of New York, Boston, Philadelphia and Other Ports of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard, Wallboard, Cigarette Papers, Sulphite, Kraft and Ground Wood Pulp.

Importers may have their shipments listed in these columns by submitting records of imports to this publication.

NEW YORK IMPORTS

WEEK ENDING MARCH 28, 1942

SUMMARY

Newsprint .....2,746 rolls.

RAGS, BAGGINGS, ETC.

National City Bank, ——, ——, 157 bls. cotton linters.
J. H. Schroeder Banking Corp., ——, ——, 238 bls. cotton linters.
——, ——, ——, 97 bls. cotton linters.
Bunge North American Grain Co., ——, ——, 412 bls. cotton linters.
——, ——, ——, 1,730 bls. cotton linters.

PHILADELPHIA IMPORTS

WEEK ENDING MARCH 28, 1942

——, ——, ——, 2,500 tons china clay.

Manning, Maxwell & Moore Change

R. R. Wason, president of the nationally known firm of Manning, Maxwell & Moore, Inc., has decided to make an important change in the operation of his company that will be of deep interest to businessmen all over the country.

This firm, which operates three big plants at Bridgeport, Conn.; Boston, Mass., and Muskegon, Mich., where they manufacture equipment for manufacturing industries, is, according to President Wason, liquidating its Railway and Mill Supplies Division at Jersey City, New Jersey. This division, which has been in operation since the late seventies, has a world-wide reputation with its thousands of customers. During all these years it has been conducted as a jobbing agency for the selling of supplies manufactured by other industries around the country.

The exigencies of war are, of course, behind this change. Mr. Wason says the liquidation of this division will result in a great strengthening and expansion of the strictly manufacturing end of the Manning, Maxwell & Moore business, which, in turn, will make possible a far greater increase in its important contribution to the cause of war production so sorely needed by our government. Mr. Wason further explains that important distribution changes will be required to distribute through other channels the products heretofore distributed by Manning, Maxwell & Moore, but, inasmuch as all these manufacturers have their own sales organizations, necessary adjustments can be made in a reasonable time. The liquidation of the Mill Supplies Division obviously will make the total inventories immediately available to industries that need them.

Mr. Wason takes the position that industry must do everything possible to help win this war in the quickest possible time.

B. C. Replaces Jap Labor

Replacement of some 700 workers in British Columbia's pulp and paper industry may create some temporary dislocation, but is not expected to curtail production, according to executives of the various companies affected.

Most of the Japanese in the pulp industry have probably been employed at Ocean Falls, where Pacific Mills Ltd., operates, but a large number have also been working at B. C. Pulp and Paper Company mills at Port Alice and Woodfibre.

Transfer of the Japanese workers depends entirely on action of the Royal Canadian Mounted Police, but the companies are co-operating to the fullest possible extent and the Japanese themselves have shown a readiness to comply with the orders. Only a few Japanese have so far left the mills.

Many of the Japanese have been engaged in pulp production in B. C. for 20 years or more. Most of them have been working in departments where a high degree of skill is not required, some in occupations customarily shunned by white labor.

A few years ago one of the reasons given by pulp mills for employment of Japanese was that one of the most important markets was Japan, and that racial discrimination in employment policy might affect the export trade. This argument no longer held when Japan withdrew from the pulp market in B. C. a year or so ago before war's outbreak.

One of the problems faced by the pulp mills is construction of new housing for white labor, and the industry is now engaged in providing this accommodation at a cost of several hundred thousand dollars.

Specifications for Fiber Boxes

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, April 1, 1942—Printed copies of the recommended specifications for corrugated and solid fiber boxes for canned fruits and vegetables are now ready, the Division of Simplified Practice of the Bureau of Standards has announced.

The current revised recommendations for boxes, effective December 1, 1941, are based on a standard unit of pack and a uniform arrangement of cans in the box for the 41 can sizes promulgated as standards in earlier simplified practice recommendations, R155-40.

Copies of R146-41, the current revised recommendations, are obtainable from the Superintendent of Documents, Government Printing Office, for 5 cents each, with discount of 25 percent from list price on orders for 100 or more copies.

The original recommendation, promulgated in 1933, established a simplified schedule of sizes of boxes based on the 27 stock sizes of fruit and vegetable cans adopted earlier as standards by the canning industry.

New York Paper and Pulp Market Review

War Production Board Announces Formation of Wood Pulp Allocation Industry Advisory Committee—Preference Order Relating To Chlorine Products Postponed To May 1 — All Prices Firm.

Office of the PAPER TRADE JOURNAL
Wednesday, April 1, 1942.

Production and shipments of major grades of paper and paper board continue high. The demand for kraft wrapping paper and paper board is reported exceptionally heavy. An easier supply situation is reported in other lines.

Business throughout the country is at the highest level on record. This is indicated in the index of general business activity for the week ended March 21, which rose to 133.8%, from 133.7% for the preceding week, compared with 122.0% for the corresponding week last year. Paper board production was 2.8% higher.

Paper production for the week ended March 21 was estimated at 103.0%, compared with 91.7% for 1941, with 70.0% for 1940, with 84.1% for 1939, and with 68.5% for the corresponding week for 1938.

Paper board production for the week ended March 21 was 101.0%, compared with 82.0% for 1941, with 70.0% for 1940, with 73.0% for 1939, and with 62.0% for the corresponding week for 1938.

The decline in advertising caused by the suspension of the manufacture of automobiles; and refrigerators and many electrical appliances after April 1, continues to be reflected in the decline in book papers extensively used by the printing trades. Demand for coated papers has been severely curtailed by this lowered consumption. Unfortunately, prospects for the future are unfavorable for the duration of the war.

The trend toward a lower civilian demand for paper in general, as predicted by some government spokesmen, is expected to become more marked in the future. This appears inevitable, for as the war effort of the nation is speeded up, production and supply of the less essential goods for civilian use must steadily decline. No serious shortage of essential paper products for civilian consumption is expected.

As most paper and pulp manufacturers are striving to meet the extraordinary current demand, increased production will be achieved this year. The problem of meeting the heaviest demand, existing in kraft wrapping and bag paper, and in container and fiber board, is expected to be solved through a wider use of lighter weight sheets than now in general use. As paper machines are now being operated at capacity, the adopting of new wartime standards, with elimination of various sizes, apparently must largely be depended upon to increase the over-all supply of paper and paper products.

The OPA announcement that the price of newsprint has been "frozen" at $50 per ton for 60 days, has created comment in Canada. Opinion in the Dominion is widely expressed that a price of $53 to American publishers is fully justified by the increased costs of current production. As the price of $50 per ton by Canadian mills to Canadian publishers has been fixed, the close cooperation between the two countries in the war effort, has suggested the common price of $50 per ton should prevail in both the United States and in Canada.

Chemical Pulp

The WPB has announced the formation of the Wood Pulp Allocation Industry Advisory Committee.

General Preference Order M-19, relating to products containing chlorine, due to take effect April 1, has been postponed to May 1.

Rags

Mill buying of old cotton rags is active at this date. Prices are well maintained on the roofing grades under the OPA price schedule.

Old Rope and Bagging

Demand for old rope continues to steadily absorb limited supplies of No. 1 Manila. Other grades, strings and threads, are firm with no important price change reported this week. The OPA has issued Maximum Price Regulation No. 55, Secondhand Bags. Prices on gunny and scrap bagging are unrestricted, although the price of roofing bagging is subject to the OPA price schedule.

Old Waste Paper

The OPA price differential of $2 per ton on No. 1 mixed paper and on old corrugated boxes, was abolished on March 23. The new ruling established the price of $14 per ton on No. 1 mixed, and $20 per ton on old corrugated boxes. Baling restrictions have been eliminated and the above prices prevail on any size or weight of bales.

Twine

Demand continues heavy for the major grades of twine. Prices are firm. No important change in prices or in the general market situation has been reported during the current week on any standard grade of hard or soft fiber twine.

To Hold Ladies Nite April 18

The Michigan Division of the American Pulp and Paper Mill Superintendents Association will hold their Annual Ladies Nite Dinner Dance on Saturday evening, April 18, 1942 at the Park-American Hotel in Kalamazoo.

L. L. "Buster" Griffiths has been selected to act as the toastmaster of the evening and plans are being made for a great party with C. B. "Baldy" Smith, Frank Eilers, Jake Parent and Roy Holden cooperating with the officers of the division on the reception and entertainment committees.

Beginning at 7:00 P.M. a reception will be held in the East Room, followed by a steak dinner in the large dining hall. After this, dancing to the music of Myrtie Ghysels and her orchestra with a top-notch floor show at the intermission.

Tickets are now on sale and reservations may be made at the Park-American Hotel for this Superintendents Party of the Year on Saturday, April 18th.

Hubbs Expands

From the smooth hard roads of the Long Island of today is a long way back to the dirt roads prevailing nearly half a century ago, about the time that Thomas J. Nagle started a paper distributing business in Jamaica, Long Island.

In 1897 and with the road conditions prevailing at that time great vision, foresight and courage were shown in the organizing of a paper business with a delivery system serving the many small towns in Queens, Nassau and Suffolk Counties and to Thomas J. Nagle belongs the credit for having established the first motorized service to extend beyond the city limits.

Later headquarters were moved to 195-02 Jamaica Avenue, Hollis, Long Island, where their office and warehouse are now located. At this location a prosperous business was built up that resulted in the making of many loyal customer friends. It is significant that so many of their employees have remained with the Nagle business for a long period, a number of which have been there for over thirty years.

In line with progress and expansion, the business of Thomas J. Nagle has now become a part of the well known house of Charles F. Hubbs & Co. and "Nagles" will now function as Hubb's long Island Headquarters, under the name of the Thomas J. Nagle Paper Corporation.

This alliance with an older and larger house should aid in extending a better and more varied service to all of long Island, in keeping with the increased growth and development of the entire Island.

The officers of the Thomas J. Nagle Paper Corporation are President, Richard C. Kettles, Jr.; Vice Presidents, Charles P. White and Charles J. Slicklen; Treasurer, Lowell J. Whiteford; Secretary, Jerome V. Nagle; the above officers forming the directorate.

Fisher Employees Join Bond Plan

The Fisher Brothers Paper Company and its employees report an original plan for investment in defense bonds.

The employees have voluntarily pledged themselves 100 per cent to the pay roll savings plan by authorizing a deduction of 10 per cent from their monthly wages and salaries for the purchase of defense bonds.

Company officials said that in appreciation of this patriotic move on the part of the employees and with a desire to help in creating savings for employees and additional purchase of bonds for the government, the company will present an additional amount of defense stamps to all employees representing five per cent of their monthly earnings.

This will mean a total of 10 per cent invested by each employee plus five per cent added by the company.

Augustus B. Collins Dead

Augustus B. Collins, formerly with the sales service department of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., died Sunday, March 22, at Riverview Hospital at Wisconsin Rapids, following a lingering illness. He was associated with the company from June, 1935 to September, 1939, when he retired. He was 59 years of age. Funeral services were held Wednesday, March 25, and burial was made in Plentywood cemetery.

Glassine Co. Employees Get Awards

The Glassine Paper Company, West Conshohocken, Pa., in cooperation with the war effort, recently sponsored First Aid classes under the direction of instructors sent from the American Red Cross. All employees interested were urged to attend the classes held on the mill premises after work hours and the management donated the necessary study text books. Interest ran high and the instructors were pleased with the progress of the men. Particular emphasis was put on local industrial conditions and a study of war gasses was included.

The McDowell division men have finished their course, having elected to attend classes twice each week for seven weeks, and the following men have been given certificates of proficiency from the local Red Cross Chapter: Joseph Rippert, Rewinderman, Frank Rowan, Cutterman, Thomas Nolan, Finisher, Roland Pennock, Inspector, Charles Traverse, Maintenance, Edgar Ebert, Maintenance, Andrew Oprendek, Machinist, Walter Levering, Super Calender Backtender. Charles Shelly, Laboratory, Peter Caffrey, Laboratory, John Harrison, Finishing Room Foreman, John Duff, Packing, William Franz, Office.

To each of these employees who received a certificate of proficiency from the Red Cross, the Glassine Paper Company is presenting a cash award of $25.00.

The men of the Valley Forge Division will complete their course shortly and the men awarded certificates of proficiency from the Red Cross and the cash award from their company will then be announced.

Lincoln Paper Co. Changes

CHICAGO, Ill., March 30, 1942—H. S. Stone, Jr., president of the Lincoln Paper Company, 608 S. Dearborn street, has been commissioned a Lieutenant Commander in the United States Naval Reserve and is now on active duty. He has secured a leave of absence from the Lincoln Paper Company for the duration of the war and will have no contact whatsoever with the company until the war is over. Sanger P. Robinson, vice-president of the company is taking over Mr. Stone's duties until further notice and K. M. Henderson will continue as secretary and treasurer of the company. Mark Peacock will continue to handle all matters pertaining to sales and promotion. John F. Thomas will continue as manager of the fine paper department and Walter Milnamow succeeds T. A. Selogie, who is also in the Navy, as Auditor.

Boston Paper Men Generous

BOSTON, Mass., March 30, 1942—The Paper Manufacturers and Dealers contributed $24,964.60 towards the Greater Boston United War Fund, 156 per cent of their quota. David Cheever, Hollingsworth & Whitney Company, was chairman of the group.

A. E. McMasters on Fishing Fleet Committee

A. E. McMaster, for many years general manager of the Powell River Company, and also associated with other pulp and paper concerns in British Columbia, is now the executive assistant to the committee arranging disposal of the Japanese fishing fleet in British Columbia.

OPA Defines Old Rope Contract Orders

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 1, 1942—Contracts made before February 8, 1942, to supply manufacturers with No. 1 old Manila rope at prices above the ceiling of $115 per ton may now be completed by dealers under certain conditions outlined in Amendment No. 1 to Revised Price Schedule No. 47 (Old Rags), announced today by John E. Hamm, Acting Price Administrator.

Old Manila rope is used by rope-paper manufacturers in production of such essential products as gas masks, cables, parachute flares, and electric insulating paper.

Many dealers acquired rope from collectors prior to issuance of the schedule at prices above the established maximum level in order to fulfill contracts already made. Accordingly, under the amendment, these contracts can be fulfilled at contract price if both the purchase of the rope by the dealer and its contract for resale were made before February 8, 1942—the date the schedule was made public.

However, under the amendment, the dealers must make all deliveries on such contracts on or before April 15, 1942, and must keep records showing the dates and names of persons from whom the dealer bought the rope and the price which was paid for it. In addition, the dealers must show the amount of rope acquired before February 8 in order to meet contracted orders, the dates these contracts were made, the dates of delivery and the contract prices.

The maximum price for No. 1 old Manila rope is not changed by the amendment, nor has there been any change made in the number or names of grades defined in the schedule.

Industrial Water

Industrial Water for Pulp, Paper and Paperboard Manufacture, a 145 page volume (6x9) has been issued by the Technical Association of the Pulp and Paper Industry as the first book in its monograph series.

The Association and the industry has been fortunate in being so effectively served by the enthusiastic and capable Water Committee of the Technical Association under the chairmanship of Lewis B. Miller of the Keasbey and Mattison Company. Dr. Miller and his coauthors have done a magnificent job, based on their knowledge of water technology and the industry's needs for vital information.

As in the case of the preparation of the textbooks on the Manufacture of Pulp and Paper a group of highly qualified members of the Technical Association and associates have risen to the occasion and have graciously contributed their knowledge of the subject to the technical advancement of the industry. A large number of members assisted by responding to various Association inquiries.

The scope of the monograph may be surmised from the list of chapter headings: Water Characteristics; Water Required for Pulp and Papermaking; Filtration of Water; Flocculation; Disinfection of Water; Removal of Tastes and Odors from Water; Corrosion and Its Control; Softening of Water; Boiler Feedwater Preparation and Analysis of Waters. These are followed by a Subject Index.

Although war time conditions will make it difficult for the Association committees and members to find time to proceed with the preparation of other monographs it is hoped that progress will be made in building up factual data in anticipation of future publications of value to the industry. The first monograph has established a high standard to surpass but the need for texts dealing thoroughly with technical details of manufacture is evident.

Industrial Water for Pulp, Paper and Paperboard Manufacture has been distributed to the members of the Technical Association. Copies are available to nonmembers at five dollars per copy and may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 East 42nd street, New York, N. Y.

New Literature

Mechanical power transmission for industry, is the subject of a booklet issued by the Power Transmission Council, Inc., 53-63 Park Row, New York. It is of particular interest to those interested in industrial plants facing problems of quick expansion, increased production with existing equipment, power shortage and related problems.

Rubber and how to prolong its life, is a reprinted article from *Factory Management and Maintenance*, issued by The B. F. Goodrich Co., Akron, Ohio. The industrial equipment covered included water, air, steam and fire hose, conveyor belts, V-belts, linings and miscellaneous rubber items for industrial uses.

Wrought iron pipe and products are described in a general catalogue, issued by A. M. Byers Co., Pittsburgh, Pa. The extensive Byers line of wrought iron pipe, tubular products, hot rolled products, welded steel tubular products; standard alloy steels and high heat resisting steels are included. Dimension tables are given.

Testing of condensate purity, is the subject of Catalogue N-95-163(1)—1441, issued by Leeds & Northrup Co., 4934 Stenton avenue, Philadelphia, Pa. It describes the company's simplified signalling controller. This automatic equipment uses the electrical balance method to measure electrolytic resistance of condensate, the measurement being independent of normal fluctuations in line voltage.

Water dispersed rubbers, is discussed in detail in a booklet issued by the Naugatuck Chemical Division, United States Rubber Company, Rockefeller Center, New York. The contents include a condensed history of rubber, lotol, dispersite, latex, general handling data, machinery and equipment and miscellaneous engineering data. The factual data dealing with the rise of water dispersed rubber in industry summarizes developments in this field. The machinery and equipment pages describe types of equipment available for the handling of water dispersion of rubber.

Variable speed control equipment is described in booklet No. G-423, entitled "More output for defense," issued by the Reeves Pulley Company, Columbus, Ind. It covers the numerous uses and applications for the company's equipment in defense industries and plants on many different types of machines.

Deaerator control system, is discussed in Bulletin No. 29-34 issued by The Brown Instrument Company, Philadelphia, Pa. It covers the Brown remote new-matic deaerator control system, which provides automatic control of the air-o-line type. Principles involved and application data are given.

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As a pioneer in paper mill tanks, we developed the Glazed Tile Tank which has received almost universal acceptance. More than 1,000 successful installations stand as proof of their cleanliness, long life and economy.

Here are shown three of approximately thirty tile tanks at the Kalamazoo Vegetable Parchment Company.

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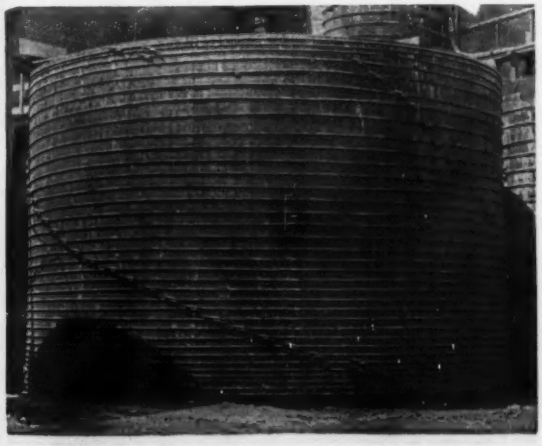

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and Convolute Cans with

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Tube Winding Adhesives

To meet the demand for speed, more speed and yet turn out stiffer tubes, converters are finding ARABOL Tube Winding Adhesives help solve production problems and reduce waste.

Both the liquid ready-to-use, the dry "cook-up" or the cold water soluble gums are made from domestic, readily available material so that prompt shipment can be assured. They are smooth running in the machine and quick setting to prevent "dog ears" at the cutter.

Your Arabol representative is a practical man who can give you money saving, time saving suggestions on the Arabol Adhesive best suited to help you solve any tube winding problem. Be sure to see him when he calls.

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MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL
Wednesday, April 1, 1942.

BLANC FIXE—Prices on blanc fixe are firm and unchanged and conform to prevailing market levels. The pulp is currently quoted at $40 per ton, in barrels, at works; the powder is currently quoted at $60 per ton, f.o.b. works. Demand reported good for the week.

BLEACHING POWDER—Quotations on bleaching powder are firm. Demand reported active for the week. Bleaching powder is currently quoted at $2.25 per 100 pounds, in drums, at works.

CASEIN—Prices on casein are little changed for the current week. Standard domestic casein, 20-30 mesh, is currently quoted at 22½ cents per pound; 80-100 mesh, at 23 cents per pound. All prices in bags, car lots. Argentina casein, 20-30 mesh, is currently offered at 17 cents per pound, c.i.f. No quotations in French casein.

CAUSTIC SODA—Quotations on caustic soda are firm and continue unchanged at prevailing market prices. Demand reported heavy. Solid caustic soda is currently quoted at $2.30 per 100 pounds; flake and ground at $2.70 per 100 pounds, in drums, car lots, at works.

CHINA CLAY—Prices on china clay are firm and conform to prevailing market levels. Demand reported moderate at this date. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay at from $12 to $22 per ton, at mines. Imported clay is currently offered at from $13 to $25 per long ton, ship side.

CHLORINE—Quotations on chlorine are firm and unchanged. Demand heavy. Full allocation went into effect February 1. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The rosin market is reported firm for the week with prices higher on some grades. "G" gum rosin is currently quoted at $2.97 per 100 pounds, in barrels, Savannah. "FF" wood rosin is currently quoted at $2.96 per 100 pounds, in barrels, New York. Seventy per cent gum rosin size is quoted at $3.32 per 100 pounds, f.o.b., works.

SALT CAKE—Prices on salt cake are firm. Demand active for the current week. Domestic salt cake is currently quoted at $15 per ton, in bulk; chrome cake at $16 per ton. All prices in car lots, f.o.b., shipping point. The quotation of $16 per ton imported salt cake is nominal.

SODA ASH—Quotations on soda ash are firm and continue to conform to prevailing market levels. Demand reported active for the week. Prices on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Prices on corn starch are firm and are reported unchanged for the current week. Pearl is currently quoted at $3.10 per 100 pounds; powdered starch at $3.20 per 100 pounds. All prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina are firm. Demand reported active for the current week. The commercial grades are currently quoted at from $1.15 to $1.25; iron free at from $1.75 to $1.85 per 100 pounds. All prices in bags, car lots, f.o.b., works.

SULPHUR—Prices on sulphur are firm and conform to prevailing market levels. Annual contracts are currently quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $18 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $15 to $21 per ton, at mines. No quotations on imported talc.

MARKET QUOTATIONS

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	"	—
Kraft—per cwt.—Delivered Zone A			
Northern. Extra Quality	6.00	@	7.00
Superstandard	5.25	"	6.25
Northern Standard Wrapping	4.75	"	5.25
Standard Wrapping	4.75	"	—
Tissues—Per Ream—Carlots			
White No. 1	1.12½	"	—
White No. 1 M. G.	1.05	"	—
White No. 1½	1.00	"	—
White No. 2	1.00	"	—
Anti-Tarnish M. G.	.95	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet	5.70	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.35	"	—
Bleached, Jr.	2.65	"	—
Manila—per cwt.—C. l. l. a.			
No. 1 Jute	8.75	@	10.75
No. 1 Manila Wrapping, 35 lb.	5.50	"	5.75
No. 2 Manila Wrapping, 35 lb.	5.25	"	5.50
Boards, per ton—			
News	*48.00	@	—
Chip	*45.00	"	—
Sgl. Mla. Lt. Chip	*60.00	"	—
White Pat. Coated	*75.00	"	—
Kraft Liners 50 lb.	*60.00	"	—
Binders Boards	84.00	"	116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5.; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$40.25@$47.25	$41.40@$48.50
100% Rag	32.20 " 37.75	33.35 " 39.25
85% Rag	.... "	32.20 " 37.75
75% Rag	24.75 " 29.00	25.90 " 30.50
65% Rag	.... "	22.80 " 27.75
50% Rag	18.70 " 22.75	19.90 " 24.25
25% Rag	16.40 " 20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$10.55@$12.75	$11.70@$14.25
No. 2	9.65 " 11.75	10.80 " 13.25
No. 3	9.20 " 11.25	10.35 " 12.50
No. 4	8.90 " 10.75	10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper. Delivered in Zone 1:

No. 1 Glossy Coated	$13.65	@	$15.50
No. 2 Glossy Coated	12.40	"	14.00
No. 3 Glossy Coated	11.60	"	13.25
No. 4 Glossy Coated	11.15	"	12.75
No. 1 Antique (watermarked)	10.25	"	11.75
No. 2 Offset	9.60	"	11.00
A Grade E. F.	9.35	"	10.75
A Grade S. & S. C.	9.60	"	11.00
B Grade E. F.	8.85	"	10.25
B Grade S. & S. C.	9.10	"	10.50
C Grade E. F.	8.55	"	9.75
C Grade S. & S. C.	8.80	"	10.00
D Grade E. F.	8.25	"	9.50
D Grade S. & S. C.	8.50	"	9.75

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	No prices		
Dry	No prices		
(Delivered)			
No. 1 Domestic and Canadian	40.00	@	41.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	3.62½	@	4.71
Prime Qualities—			
Easy-Bleaching Sulphite	3.17½	"	4.81
Strong Unbleached Sulphite	3.17½	"	4.21
News Grade, delivered			
Unbleached Sulphite	63.75	"	67.71
(On Dock, Atlantic Ports)			
Kraft Bleached	4.12½	"	—
Kraft Light & Strong	No prices		
Kraft No. 1	No prices		
(Delivered)			
Kraft Domestic and Canadian	3.00	"	4.00
(Delivered)			
Soda Bleached	3.30	"	—

Add 60 cents per short ton, cost charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	8.00	@	8.25
Silesias No. 1	4.50	"	4.75
New Unbleached	8.00	"	8.25
Blue Overall	5.75	"	6.00
Fancy	3.00	"	3.25
Washables	2.50	"	2.75
Mixed Khaki Cuttings	2.50	"	2.75
O. D. Khaki Cuttings	3.00	"	3.15

Old Rags

White, No. 1—			
Repacked	*3.80	"	—
Miscellaneous	*3.20	"	—
White, No. 2—			
Repacked	*2.90	"	—
Miscellaneous	*2.65	"	—
Third and Blues—			
Repacked	*2.20	"	—
Miscellaneous	*1.80	"	—
Roofing Rags—			
No. 1	*1.55	"	—
No. 2	*1.45	"	—
No. 3 (bagging)	*1.35	"	—
No. 4	*1.35	"	—
No. 5A	*1.35	"	—
* Old Manila Rope	5.75	"	—

*OPA Maximum Prices.

Foreign Rags

All prices nominal

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.30
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—
No. 4 White Linens	2.25	@	3.25
No. 1 White Cotton	4.25	"	4.75
No. 2 White Cotton	3.25	"	3.75
No. 3 White Cotton	2.50	"	3.00
No. 4 White Cotton	1.90	"	2.20
Extra Light Prints	2.00	"	2.40

Confidence Rides With the Dawn Patrol

When the bombers of the Atlantic Patrol thunder into the dawn their pilots look ahead with confidence—confidence born of faith in their machines and the fuel that drives their motors.

Somewhere, in an American refinery, one of America's great army of behind-the-scenes workers, with a Bausch & Lomb Refractometer, is doing his part in making American oils and gasolines so efficient and safely dependable.

Here, again, Bausch & Lomb instruments are at work helping to strengthen America's front lines of defense. Today, American manufacturers turn to precision optical methods for critical analysis, precise measurement, quality control. Bausch & Lomb Contour Projectors, Metallographic Equipment and microscopes for inspection and control take their place alongside range finders, gun sights and binoculars in contributing to the vital needs of national defense.

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Robert Sinclair ★ KALAMAZOO, MICH. — 1020 EGLESTON AVE. TEL. KAL 2-5041

James Symonds ★ SEATTLE, WASH. — 8337-26TH AVE. TEL. CAP 7026

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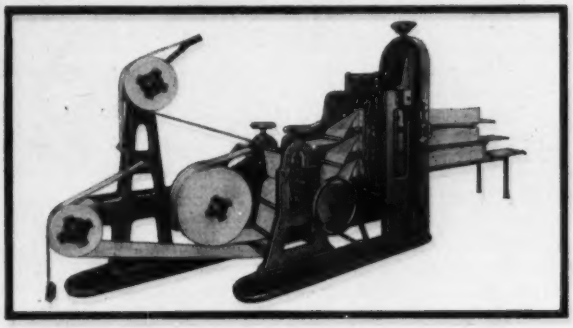

NAPKIN FOLDER

It makes them all—plain, embossed and printed — quarter-fold, dispenser-fold, sixteenth-fold and eighth-fold. Folds 100,000 per hour — every napkin perfectly folded and delivered in a smooth, clean pack ready for wrapping. Used by every large producer of napkins in the United States and many foreign countries.

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Wood Pulp & Paper Agents

60 East 42 Street New York, N. Y.

Ord. Light Prints...	1.75	"	2.15
Med. Light Prints...	1.55	"	1.95
Dutch Blue Cottons.	2.25	"	2.50
French Blue Linens.	3.00	"	—
Checks and Blues...	2.00	"	—
Linsey Garments....	1.90	"	2.00
Dark Cottons.....	1.50	"	1.60
Old Shopperies.....	1.30	"	1.45
New Shopperies.....	1.45	"	1.50
French Blues.....	2.25	"	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	4.00	@	4.25
Wool Tares, light....	4.25	"	4.50
Wool Tares heavy..	4.50	"	4.75
Bright Bagging.....	4.50	"	4.85
Manila Rope—			
Foreign	—	"	—
Domestic	*5.75	"	—
Jute Threads.....	4.25	"	4.75
Sisal Strings.....	3.25	"	3.75
Mixed Strings.....	1.10	"	1.20

* OPA Maximum Price.

Old Waste Papers

(F. o. b. New York)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Envelope Cuts....	3.12½	"	—
No. 1 Hard White Shavings, unruled.	2.87½	"	—
No. 1 Hard White Shavings, ruled...	2.50	"	—
Soft White Shavings, one cut.....	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings..	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines.....	1.57	"	—
Mixed Books.....	1.07½	"	—
No. 1 White Ledger	2.17½	"	—
No. 2 Mixed Ledger, colored	1.87½	"	—
New Manila Envelope Cuttings, one cut..	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas.....	1.85	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft.	2.50	"	—
New 100% Kraft Corrugated Cuttings..	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	1.75	"	—
Old Corrugated Containers	1.00	"	—
Box Board Cuttings.	.72½	"	—
White Blank News.	1.65	"	—
Overissue News.....	.85	"	—
No. 1 News.....	.75	"	—
No. 1 Mixed Paper.	.70	"	—

Twines

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.21	@	—
White Hemp.....	.21	"	—
Fine Polished—			
Fine India.....	.26	"	—
Unpolished—			
Box	.17¾	"	—
Paper Makers.....	.17	"	—
Tube Rope.....	.19	"	—
Wall Paper.....	.20½	"	—
Wrapping	.23	"	—
Soft Fiber Rope...	.19	"	—
Cotton	.25	"	—
(Hard Fiber)			
Medium Java.....	.18	"	—
Mex. Sisal.....	.16	"	—
Manila	.26	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White No. 1.	.07¾	@	.07½
New White No. 2.	.04½	"	.05
Light Silesias.....	.04½	"	.04¾
Silesias, No. 1....	.04	"	.04¼
Black Silesias, soft	.03¾	"	.04
New Unbleached..	.07¾	"	.07½
Washable Prints...	.03¾	"	.03½
Washable No. 1..	.02	"	.02¼
Blue Overall.....	.04½	"	.05½
Cottons—According to grades—			
Washable shredding	—	"	.01¾
Fancy Percales....	.03¼	"	.03½
New Black Soft...	.02¾	"	.03
New Dark Seconds	1.75	"	2.00
Khaki Cuttings—			
No. 1 O. D.....	.03	"	.03¼
No. 2 Mixed.....	.02¼	"	.02½
Corduroy	.01¾	"	.02¼
New Canvas.....	.04¾	"	.05¼
New Black Mixed.	—	"	.02½

Domestic Rags (Old)

White No. 1—Repacked	3.80	"	—
White No. 2—Repacked	2.90	"	—
Miscellaneous No. 1.	3.20	"	—
Miscellaneous No. 2.	2.65	"	—
Thirds and Blues—			
Miscellaneous	1.80	"	—
Repacked	2.20	"	—
Black Stockings—			
(Export)	Nominal		
Roofing Stock—			
Foreign No. 1.....	Nominal		
Domestic No. 1...	1.55	"	—
Domestic No. 2...	1.45	"	—
Roofing Bagging..	1.35	"	—
Old Manila Rope...	5.75	"	—

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	Nominal		
Domestic	3.00	"	3.50
Sisal Rope.....	3.75	"	—
Mixed Rope.....	.75	"	1.00
Scrap—			
No. 1.....	3.25	"	3.50
No. 2.....	1.75	"	1.80
Wool Tares, heavy...	4.00	"	4.25
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b. Phila.)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled..	2.50	"	—
Soft White Shavings, one cut.....	2.87½	"	—
White Blank News..	1.65	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 White Ledger.	2.17½	"	—
No. 2 Ledger, colored	1.87½	"	—
No. 1 Heavy Books & Magazines.....	1.57	"	—
Overissue Magazines	1.67½	"	—
New Manila Envelope Cuttings	2.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper.	.70	"	—
Box Board Cuttings.	.72½	"	—
Jute Corrugated Cuttings	.90	"	—
Overissue News.....	.85	"	—
No. 1 News.....	1.00	"	—

Old Papers

(F. o. b. Boston)

OPA Maximum Prices

No. 1 Hard White Shavings, unruled.	2.87½	"	—
No. 1 Hard White Shavings, ruled...	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut.....	2.87½	"	—
Hard White Envelope Cuts, one cut.....	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft.	2.50	"	—
Mixed Kraft Env. & Bag Cuttings.....	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines.....	1.57	"	—
New Manila Envelope Cuts, one cut.....	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White Blank News..	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper.	.70	"	—
Overissue News.....	.85	"	—
Box Board Cuttings.	.72½	"	—
New Corrugated Cuttings, Kraft.....	2.25	"	—
Old Corrugated Containers	1.00	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	4.25	@	—
Sisal Rope.....	4.00	"	4.25
Mixed Rope.....	1.00	"	1.25
Transmission Rope—			
Foreign	(nominal)		
Domestic	3.50	"	3.75
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope.....	5.25	"	5.50
Jute Carpet Threads.	3.25	"	3.50
Bleachery Burlap....	8.00	"	8.50
Scrap Burlap—			
Foreign	(nominal)		
Domestic	—	"	4.00
Scrap Sisal.....	4.00	"	4.25
Scrap Sisal for Shredding	4.25	"	4.50
Wool Tares—			
Foreign	(nominal)		
Domestic	4.25	"	4.50
Aust. Wool Pouches.	5.50	"	5.75
New Burlap Cuttings	5.00	"	5.25
Heavy Baling Bagging	5.00	"	5.50

Paper Mill Bagging

Paper Mill Bagging..	3.00	"	3.25
No. 2 Bagging.....	1.35	"	—

* OPA Maximum Price.

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints.	.04½	@	.04¾
Fancy Percales....	.04¼	"	.05
New White No. 1.	.08	"	.08¼
New Light Flannelettes	.06	"	.06¼
Canton Flannel, Bleached	.08¼	"	.08½
Underwear Cutters, Bleached	.08	"	.08¼
Silesias No. 1.....	.04½	"	.05
New Black Silesias..	.03¾	"	.04
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached....	.08¼	"	.08¾
Blue Cheviots....	.04¼	"	.05
Fancy	.02¾	"	—
Washable	.01¾	"	—
Cottons According to Grades—			
Blue Overalls.....	—	"	.05¼
New Black, Soft..	.03¼	"	.04
Khaki Cuttings.....	.04½	"	.04¾
O. D. Khaki.....	.04½	"	.04¾
Corduroy	.02	"	.03½
New Canvas.....	.06	"	.06¼
B. V. D. Cuttings...	.07¼	"	.08

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	3.80	@	—
Miscellaneous	3.20	"	—
White No. 2—			
Miscellaneous	2.65	"	—
Twos and Blues, Repacked	2.20	"	—
Old Blue Overalls...	2.25	"	2.30
Thirds and Blues, Repacked	2.20	"	—
Miscellaneous	1.80	"	—
Black Stockings.....	3.50	"	4.00
Roofing Stock—			
No. 1.....	1.55	"	—
No. 2.....	1.45	"	—
No. 3.....	1.35	"	—
No. 4.....	1.35	"	—
No. 5, Quality A..	1.35	"	—
Quality B..	1.20	"	—
Quality C..	.95	"	—
* Old Manila Rope..	5.75	"	—

* OPA Maximum Prices.

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons.....	(nominal)
Dutch Blues.....	(nominal)
New Checks and Blues	(nominal)
Old Fustians.....	(nominal)
Old Linsey Garments.	(nominal)
New Silesias.....	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)

OPA Maximum Prices.

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled.	2.50	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 White Ledger	2.17½	"	—
No. 1 Heavy Books & Magazines.....	1.57	"	—
White Blank News..	1.65	"	—
Mixed Kraft Env. & Bag Cuttings..	2.75	"	—
No. 1 Assorted Old Kraft	1.75	"	—
Overissue News.....	.85	"	—
No. 1 News.....	.75	"	—
No. 1 Mixed Paper..	.70	"	—
No. 1 Roofing Rags..	1.55	"	—
No. 2 Roofing Rags..	1.45	"	—

OPA to Set Pulp Prices

WASHINGTON, D. C., Apr. 1, 1942—Producers of wood pulp who signed individual agreements with the OPA not to increase prices, must absorb for the time being the added costs resulting from the recent freight rate increases, John E. Hamm, Acting Price Administrator, announced today.

A large majority of the wood pulp producers signed agreements not to increase prices for any reason without giving 30 days' notice to the OPA.

Within the next week the OPA will establish formal maximum prices for the second quarter, which begins April 1. The 6% freight rate increase, authorized as effective March 13 by the Interstate Commerce Commission, is a factor being carefully considered in establishing the price ceiling.